# INDUSTRIAL EQUIPMENT NEWS

OCTOBER - 1951
VOL. 19 • NO. 10

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

## What's New IN EQUIPMENT, PARTS, MATERIALS

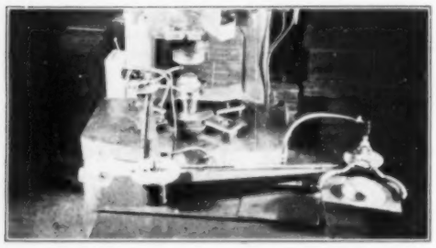
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries


BREVITY—Identify by IEN-9807 if you write the maker

### PRESS TOOLS . . Motor driven feeder handles work into and out of dies

Source: MAGNAFLUX CORP.
5914 Northwest Highway, Chicago 31, Ill.



**Loadac** trade names a new motor-driven air-operated finger-type feeder. It picks up work pieces from a loading station, swings them one at a time into position in a press. Simultaneously it picks up a completed piece and swings it to an unload station. The feeder assembles as a unit in a housing measuring 34 by 34 in. at the front of a press. It is equipped with screw-type feet for vertical adjustment.

**Drive** includes a variable-speed transmission that can be set for a feed rate between 300 and 1,200 pieces per hour. Interchangeable fingers take work from 1 to 6⅝ in. in diameter with minimum height of 1 inch. Vacuum cups can be substituted for the fingers to handle flat blanks.

**Feeder operation** ties in with the press so the latter is tripped after work is correctly positioned. A piece being moved toward the dies will be dropped if one previously formed has not been removed. Two pieces cannot be placed at the same time. If work is not removed from the die a safety device also prevents operation of the press.

BREVITY—Identify by IEN-9808 if you write the maker

### BEARING . . Floating nylon liner inside press fit sleeve, specified dimension

Source: THOMSON INDUSTRIES INC.
1027-31 Plandome Road, Manhasset, N. Y.

**Nylube** trade names a new sleeve-type bearing consisting of an outer metal sleeve to press-fit into a housing and an inner spiral-cut liner of DuPont FM10001 nylon. The nylon is free to float circumferentially. In applications where lubrication is permissible, the outer sleeve can be provided with annular grooves to store oils or grease. Sleeve and flange-type assemblies are available. Designs can include a separate nylon thrust surface.

**Nylon** is characterized by its ability to present a tough glazed surface having a low coefficient of friction with little or no lubrication. It will stand up in temperatures to 250 deg. F. It is not subject to attack by most industrial chemicals. It dampens mechanical vibration to result in smooth quiet operation. Sizes and designs are to order.

BREVITY—Identify by IEN-9809 if you write the maker

### LUBRICATING . . Liquid concentrate for rubber, emulsifies in water

Source: INTERNATIONAL PRODUCTS CORP.
P. O. Box 118-A, Trenton 1, N. J.

List price range
85 to 70 cents
per pound

**Lubricant P-80** is a new concentrate consisting of an isopropyl alcohol solution in combination with synthetic esters and ethers developed by the company. It is designed for application, following dilution in 3 to 5 parts water.

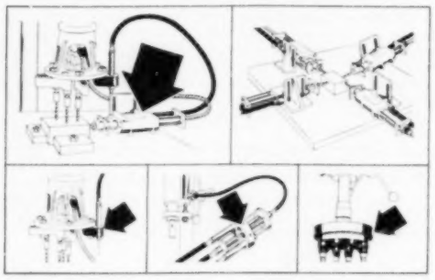
**It makes** the rubber extremely slippery and so can be used to assist in assembly of rubber components such as channels, grommets. It also assists in machining and cutting rubber and elastomers. It is practically undetectable when dry and since it is inert on rubber it can be left on the finished work. It is not harmful to skin, clothes or equipment. Packaging is in 1, 5 and 55-gal. containers. Weight is 8 lb. per gallon.

**SUPPORT YOUR COMMUNITY CHEST**

BREVITY—Identify by IEN-9810 if you write the maker

### DRILLING . . Attachment head, flexible shaft drive, hydraulic feed

Source: COMMANDER MFG. CO.
4223-27 W. Kinzie St., Chicago 24, Ill.



**Multi-Angle** trade names a new drill head designed to mount on a jig or fixture or to assemble in a special machine singly or in multiple to a total of 8 units in one group. The threaded holes in the housing side provide for set-up on a base or bracket to drill at any angle. A flexible shaft connecting at the rear extends back to a point for rotary drive. A hydraulic hose also extends from the housing to terminate in a hydraulic ram that transmits linear movement from the driving element to the head spindle for a maximum feed of 4 inches.

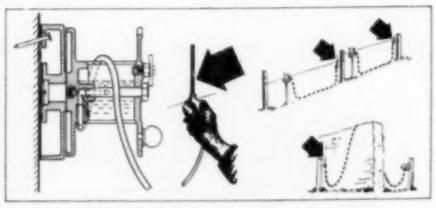
**The head** measures 10¾-in. in overall length, with the spindle retracted. Width is about 1¾ in. and height in horizontal position is about 2⅝ inches. The spindle takes collets from No. 80 to ⅜ inch. No. 1 Morse taper or ½-in. woodworking-bit drive can be specified. The flexible drive shaft and the hydraulic hose each measure 36 in. in length.

**Accessory equipment,** that can be specified, includes a mounting bracket that applies on the company's Model-500 or Model-900 multiple-spindle head to attach single flexible shafts and feed elements, a circular gear housing for drive by a machine spindle to provide a maximum of eight connections for the flexible shafts, a unit actuator to mount on the spindle quill and provide operating pressure for a maximum of eight spindle feeds. Each drill head with its flexible shaft, hydraulic hose and mounting bracket lists at $125. The gear housing adds $155. The unit actuator adds $82.50. Mounting brackets for the multiple spindle heads add $15 each.

BREVITY—Identify by IEN-9811 if you write the maker

### GAGE . . Hydrostatic level, 40 ft. tube on water reservoir reel

Source: HYDROLEVEL
37 DeSoto Ave., Ocean Springs, Miss.



**Aluminum reel,** which also acts as a reservoir in this new level, is hung up horizontally on a vertical surface or is set up vertically on its base at about the center of a location where level reference markings are to be established. The reservoir contains a mixture of water with Prestone antifreeze. This water fills the transparent plastic tube to a valve at the outer end. The valve stem provides push-type action for opening so the liquid can flow into a sight tube on the outlet side of the valve.

**The sight tube** carries a reference gage line to which the liquid is brought by raising or lowering the valve. At this point, the end of the valve stem serves as a scriber to mark a level-reference line. The same procedure is employed to establish the line at any other required locations as well as at the center where the reel is set up.

**Water cannot flow** out of the reservoir to make the gage active until a valve in the outer reel flange is opened to vent above the liquid level. This valve is closed while the gage is being handled between setups. When it is not in service the indicating tube is removed from the outlet side of the valve and the complete assembly, with the tube reeled up, is placed inside a cylindrical metal carrying case. Reference marks can be made with the tube passing over and under and around obstructions at any location within the 40-ft. range.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

## PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

## WHAT DO YOU NEED?

**READER SERVICE FORM . . Look between pages 16 and 17 or 104 and 105 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.**

•

### From a Company President

"IEN presents the best summary of what is going on in equipment and tools that I know of."

•

### Departments


**READER SERVICE FORM** — Pages 16-17 and 104-105
To assist you in securing the information you want

**SUBJECT INDEX** — Pages 117-119
With our four-step suggestion on how to use it

**GEZ-356** — Page 4
"Productive Maintenance" to conserve machine hours

**NEWS NOTES** — Page 20
Reviews of unusually helpful literature and services

**NEW LITERATURE** — Page 78
Condensed reviews of current manufacturers' catalogs

**"I WISH I HAD"** — Page 120
Requests we cannot answer, printed in the hope you can


•

### Our Selections in This Issue


**COMMUNICATING** — Page 31
Two-way radio reports production from shop to office

**DRIVE** — Page 9
Link-type V-belt presents double leather driving faces

**ENGINE** — Page 60
Supercharged diesel, 425 to 3,200 hp. at 450 rpm.

**GAGES** — Page 5
Measuring instruments to inspect defense production

**GRINDING** — Page 24
Data bulletins, catalog, sound films, training course

**HAMMER** — Page 12
Copper alloy head has spring-backed striking faces

**METALS** — Page 113
Enamel coated strip in aluminum, brass and steel

**PRESS TOOLS** — Page 26
Bulletin on matrix alloys to make punches and dies

**SIGNALING** — Page 89
Rotary indicator, solenoid operated, three positions

**STRAPPING** — Page 83
Corrugated strap for expanding, contracting enclosures

**TESTING** — Page 27
Heat indicating paint changes color at set temperature

**WEIGHING** — Page 76
Balance scale reads moment weight of jet engine blade



W. E. Tisch, Editor & V. Pres.
F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546


HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

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- ☐ Production Mr. .....
- ☐ Engineering Mr. .....
- ☐ Product Design Mr. .....
- ☐ Purchasing Mr. .....
- ☐ .....

BREVITY—Identify by IEN - 9822 if you write the maker

With today's accelerated pace in the field of machine design, there is vital need for taking the correct steps, in their proper order, to reach promptly and surely a practical, dependable bearing installation.

These steps are plotted in a book entitled "Application Procedure" from New Departure's engineering library, with copious cross references to other books also readily available. Ask for Booklet "AP". New Departure, Bristol, Connecticut.

*Nothing Rolls Like a Ball . . .*

**NEW DEPARTURE**

**BALL BEARINGS**

136

BREVITY—Identify by IEN - 9813 if you write the maker

# FREE! 32-PAGE HANDBOOK

## SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

**Stops Drip from:**

- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

**LOW COST — EASY TO APPLY**

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

**HANDBOOK SHOWS HOW**

**Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.**

*Send for your Free Handbook Now!*

**J. W. MORTELL CO.**

*Technical Coatings Since 1895*

**Dept. IE, Kankakee, Ill.**

BREVITY—Identify by IEN - 9814 if you write the maker

**CONSERVE** weight
**PRESERVE** surface finishes
**OBSERVE** reduced costs
with
**Rigidized Metals**
. . . and get

| INCREASED SECTION THICKNESS | GREATER FLEXURAL RIGIDITY and BUCKLING STRENGTH |
|---|---|
| HIGHER IMPACT STRENGTH | LOWER MAINTENANCE COSTS |

Write on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK Today

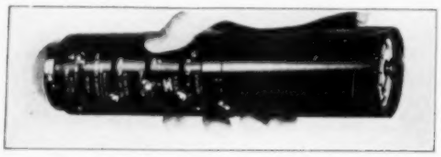
Rigidized Metals Corporation

66410 OHIO STREET, BUFFALO 3, N. Y.

BREVITY—Identify by IEN - 9815 if you write the maker

## TESTING . . Sound level meter weighs 36 oz., measures 10½ inches

Source: HERMON HOSMER SCOTT INC.
383-87 Putman Ave., Cambridge 39, Mass.



**Type 410-B** is new design of the company's meter, previously described IEN-9252-48. Assembly is in a housing measuring 10½ by 2½ inches. A microphone is in one end and a meter in the other. The housing encloses the required circuits, subminiature tubes, hearing-aid batteries, the latter having an operating life of about 50 hours. Sound-level range is from 34 to 140 db. above the standard ASA reference level of 0.0002 dynes per square centimeter. The instrument meets specifications of the ASA for sound-level devices.

**The decibel** switch on the side of the housing is turned to a position where a reading appears in the meter. The sum of the switch reading and of the meter reading will then represent the noise level in decibels. The microphone can be removed and attached to the end of an extension conductor. Analyzers can be plugged into a jack on the instrument housing.

BREVITY—Identify by IEN - 9816 if you write the maker

## PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

**Last call for a free copy**

**A few copies remain** to be allotted from the limited printing of Thomas' Register Jr. and are available in this "last call" to those of you who have not already requested a free copy. We will put your name on the list before all are allotted.

**The book** is a companion publication to Thomas' Register. It carries 2,400 pages measuring 4 by 10 inches. It lists names, addresses and rating of selected manufacturers under some 50,000 product headings.

BREVITY—Identify by IEN - 9817 if you write the maker

## HANDLING . . Spring type tweezers for miniature instrument bearings

Source: BAKER CO.
51 Industrial Ave., Dept. A, Maplewood, Maine

**Two designs**, one to grip a bearing on its outside race and the other to grip in the bearing bore, are included in a new line of special tweezers with capacity to handle bearings having bores from 3/32 to ½ inch. The tweezers keep the operator's fingers away from the bearing during inspection, cleaning and relubrication. They assist in positioning the bearings in locations ordinarily difficult to reach.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9818 if you write the maker

## For Lifting and Holding Heaviest Loads

**DUFF-NORTON**
*Ratchet Lowering*
**JACKS**

*for* INDUSTRIAL PLANTS • MILLS • MINES • RAILROADS • CONTRACTORS RIGGERS • TRUCKERS • ETC.

Constructed for long, trouble-free service—smooth action—Duff-Norton Ratchet Lowering Jacks raise loads weighing from 5 to 25 tons from 7½" to 18". Built for rugged use. Many sizes to choose from.

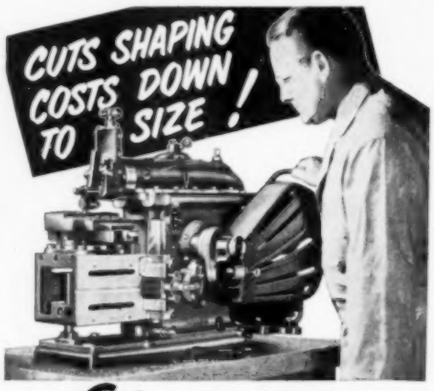
*Write for Catalog 203G.*

**THE DUFF-NORTON MANUFACTURING CO.**

Main Plant and General Offices, PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.

*"The House that Jacks Built"*

BREVITY—Identify by IEN - 9819 if you write the maker




## Atlas 7" SHAPER

Easier to set up . . . cheaper to operate . . . dependably accurate . . . that's the record of Atlas in thousands of plants.

On any operation within its capacity it will save money.

Atlas was the *first* 7" shaper and *no one yet has matched its sound construction features, performance, or value.* Send for detailed catalog. Compare it feature for feature. See for yourself.

100 YEARS Atlas

**ATLAS PRESS CO.**
1091 N. PITCHER ST.
KALAMAZOO, MICHIGAN

BREVITY—Identify by IEN - 9820 if you write the maker

# FAST

Pull the trigger of this Kidde $CO_2$ Extinguisher. Flame-smothering $CO_2$ kills fire in seconds. No mess. No fumes. Write for free literature.

**Walter Kidde & Company, Inc.**
**1036 Main Street, Belleville 9, N. J.**

**Kidde**

BREVITY—Identify by IEN - 9821 if you write the maker

*Inseparable!* EASY-FLO and SIL-FOS brazing

*Fast, low-cost metal joining*

In joining metals, you always want strong, lasting joints—and you want them in the fastest possible time with the least amount of labor, because that means low cost. Fast, low-cost metal joining is inherent in the make-up and properties of EASY-FLO and SIL-FOS. In fact, with these low-temperature silver brazing alloys you can reduce brazing to a push-button operation and get any output you need.

***A Brazing Expert is at Your call***

Without obligation, we'll send to your plant one of our experienced Field Service Engineers. He can tell you if, where and how to use EASY-FLO and SIL-FOS to advantage. Just say when you'd like him to call.

**AT THE DETROIT METAL SHOW October 15-19**

**See an actual production brazing job in action . . . See many examples of EASY-FLO and SIL-FOS brazed parts from both defense and domestic production . . . Talk over your metal joining problems with our experienced engineers . . . BOOTH F-315**

**24 PAGES OF USEFUL BRAZING FACTS IN BULLETIN 20**

*Write for a copy . . .*

**HANDY & HARMAN** 82 Fulton St., New York 38, N. Y.

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 9822 if you write the maker

# For Design Engineers using pipe and tubing!

**HERE'S A FREE BULLETIN THAT CAN HELP YOU**

If you are concerned with pipe and tubing design, you'll want the information in Inco's Technical Bulletin T-17, "Fabrication and Design of Nickel and High-Nickel Alloy Pipe and Tubing."

It contains complete technical data on tough, corrosion-resistant Nickel and Nickel Alloys. It covers the use and selection of the proper alloy to meet the highest operating temperatures.

It discusses engineering design as related to metallurgical properties of Nickel and High-Nickel Alloy tubing. It includes properties; bursting pressure design formulae; A.S.M.E. code requirements; expanding of condenser and heat-exchanger tubing; welding procedures, brazing and soldering; bending and coiling; cast pipe fittings; tolerances and specification numbers.

**THE INTERNATIONAL NICKEL COMPANY, INC.**
67 Wall Street, New York 5, N. Y.

BREVITY—Identify by IEN - 9823 if you write the maker

# it's TOUGH! it's dependable

## Securityflex PORTABLE CORD

Securityflex* keeps equipment running. Takes abuse, resists kinking, flexes indefinitely. Resists oil, water, abrasion, age, ozone.

Insist on Securityflex Portable Cord for your equipment. So rugged it's used on mine drills. It's the right cord for your job. Made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 9824 if you write the maker

# BROWNING First Again!

WITH "UNBREAKABLE" MALLEABLE IRON SPLIT TAPER BUSHINGS

in BROWNING GRIPBELT SHEAVES

FLEXIBLE AND RIGID COUPLINGS and BROWNING PAPER PULLEYS

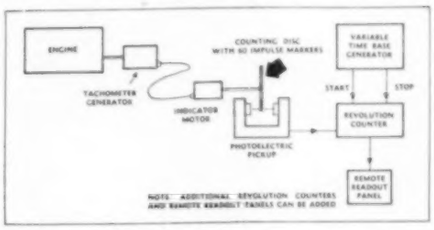
Write for the name of the BROWNING distributor near you

**BROWNING MANUFACTURING COMPANY**
MAYSVILLE, KENTUCKY, U. S. A.

BREVITY—Identify by IEN - 9825 if you write the maker

## TACHOMETER . . Electronic equipment for aircraft engine test to 15,000 rpm.

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.




**New assembly** of the company's previously developed electronic tachometer with a variable time-base generator permits reading aircraft engine speed directly for any given gear ratio in the drive. Minimum accuracy of 0.025 per cent is guaranteed above 5,000 rpm. Special assemblies are avilable for readings to 100,000 rpm.

**The equipment** employs the company's standard tachometer generator and electrically-connected indicator motor to drive a small aluminum disc containing 60 slots around its periphery. This disc operates with a photoelectric pick-up to generate pulses that are applied to the revolution counter.

**The time-base generator** consists of a 100-kc. crystal-controlled oscillator and counter divider arranged so a predetermined interval from 1 to 4 sec. is generated. This interval is adjustable in steps of 10 microseconds and is the length of time during which pulses are counted. The generator, operating on a cyclic basis, gates the count into the revolution counter for the established interval. Then it turns off for the predetermined read-out period of 1, 2 or 4 sec. after which a new counting cycle starts. Adjustment in this variable generator permits setting the interval for direct engine speed reading.

**Readings** can be made at the revolution counter or at a remote read-out panel. The equipment can be specified with several units of both the counter and the panel. The counter can be made to re-cycle automatically or to retain its reading.

BREVITY—Identify by IEN - 9826 if you write the maker

## LIGHTING . . Fluorescent lamp, mercury vapor design, rates 400 watts

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

**Type J-H1** is a new mercury-vapor lamp with an inside coating of phosphor that fluoresces red when activated by invisible ultraviolet light generated by the quartz arc. This action balances the spectrum to provide a white light. The lamp is equipped with a Type BT-37 bulb having an isothermal shape for even operating temperatures over the entire wall. The lamp can be operated in any position and used in existing fixtures for 400-watt mercury lamps.

**The outer bulb** measures about 4⅝ in. in diameter at its center. It surrounds the inner quartz bulb which, in turn, encloses the mercury arc. The base is standard mogul screw. Rated initial capacity is 18,000 lumens. Average life is 4,000 hours. Starting time and restriking time are both four minutes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 86*

BREVITY—Identify by IEN - 9827 if you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

## "FLUD-LITE" MAGNIFIER

Fluorescent Lighting for INSPECTORS ASSEMBLY WORKERS TOOLMAKERS MACHINISTS And Others Engaged In Close Work

Floodlights the work area with scientifically focused, shadow-free fluorescent light, magnifying the work through a high quality 5" diameter lens with a focal distance of 13". Magnification two to one. Also available with auxiliary lens providing four to one magnification.

WRITE FOR BULLETIN F-101

IPCO Safety Equipment for all Industries

**INDUSTRIAL PRODUCTS COMPANY**
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 9828 if you write the maker

LUBRICATION ECONOMY

# "THIS LUBRICANT reduces Service Calls!"

The sales director of the Lynch Corporation, manufacturers of the MORPAC forming and wrapping machine, writes us, *"Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."*

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

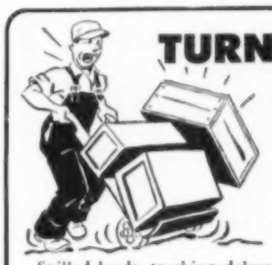
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

**LUBRIPLATE DIVISION**
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

*The Different LUBRICANT!*

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 9829 if you write the maker



# TURNOVER LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, underfoot hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over week-end (no plant tie-up) with 'Incor' 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough 'Incor'* curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

**LONE STAR CEMENT CORPORATION**

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 9830 if you write the maker

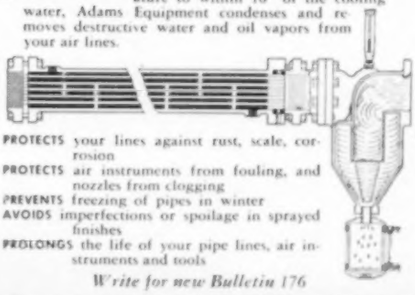
# You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

*Write for new Bulletin 176*

**R. P. ADAMS CO., INC.** 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 9831 if you write the maker

WHAT ABOUT STRESS RAISERS?

*This book gives the answers..*

How to avoid the localized stresses which start failure is a basic problem of design. This 72 page booklet analyzes many good and bad features of design. It also deals with problems of steel selection and treatment from the viewpoint of the design engineer—instead of the metallurgist.

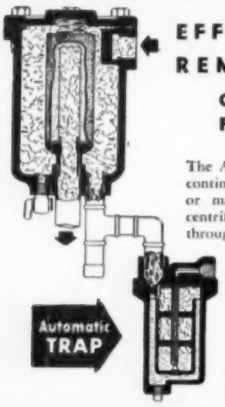
Write for "4 Keys to Satisfaction"—it is free.

*This booklet sent to you FREE*

**Climax Molybdenum Company**
**500 Fifth Avenue · New York City**

BREVITY—Identify by IEN - 9832 if you write the maker

**Poro-Stone Filtration**
**FOR COMPRESSED AIR**




EFFICIENTLY REMOVES

OIL, WATER PIPE SCALE

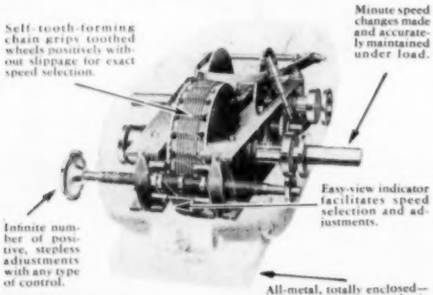
The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

**R. P. ADAMS CO., INC.**
219 E. Park Dr., Buffalo 17, N. Y.

**ADAMS** *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 9833 if you write the maker

*Only* the P.I.V. gives you all these advantages in a variable speed drive




**WRITE FOR BOOK 2274**

LINK-BELT COMPANY
Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, factory branch stores and distributors in principal cities. 12,520

**LINK-BELT**
P.I.V. VARIABLE SPEED DRIVE

**INDUSTRIAL EQUIPMENT NEWS**

CCA · The Original IEN Founded 1925 · NBP

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**461 Eighth Avenue, New York 1, N. Y.**

*What's New* · EQUIPMENT · PARTS · MATERIALS

Vol. 19 OCTOBER, 1951 No. 10

## *GEZ-356*

"Planned Outage" names a procedure by which plant equipment is taken out of service for thorough inspection and complete reconditioning at predetermined intervals. The intervals are determined by past experience with each equipment unit coupled with knowledge of the service it will be called upon to perform in future schedules. The intervals are based upon removal from service before unplanned breakdown is likely to occur, upon timing that will minimize interference with production. Time out is controlled by planning the job and making certain of adequate stocks of required materials and replacement parts.

This procedure has been shown to increase materially the machine hours normally available for production as compared to those that can be counted on in any procedure that permits unplanned breakdown. It is the heart of a program under the title, "Productive Maintenance" that has been worked out by General Electric's Service Shop Division Manager H. F. McCullough and Renewal Parts Division Manager H. D. Beale. Together they have assembled the basic parts of the program. The company now offers it for your use on request.

Nine sections are packaged in a "Kit of Tools", GEZ-356. The kit is available on request to General Electric Co., Department 6X-201, Schenectady 5, N. Y. You can mark GEZ-356 on your Reader Service Form if you want us to forward your request. The sections include the following material:

1. An 8-page booklet addressed to Management to tell the basic principles and advantages and to list the requirements . . . an adequate maintenance budget, an equipment record setup, a check on equipment condition, adequate stocks of renewal parts, outage planning well in advance, approved maintenance practices.

2. A leaflet describing a slidefilm on the subject that you can arrange for showing to Management.

3. A production balance sheet to show what productive maintenance could have added to your plant's actual output during the past year.

4. Equipment survey forms for your key machines, one for reconditioning recommendations and one concerning adequate stocks of renewal parts.

5. A planned-outage schedule to provide look-ahead for a year of scheduled outages.

6. A motor-record card as a sample of a form available in quantity for the motors in your plant.

7. A 40-page booklet telling how to maintain motors and generators.

8. A 36-page booklet on maintenance of electric control apparatus.

9. Reprint of an article on building a maintenance program to fit the National Emergency.

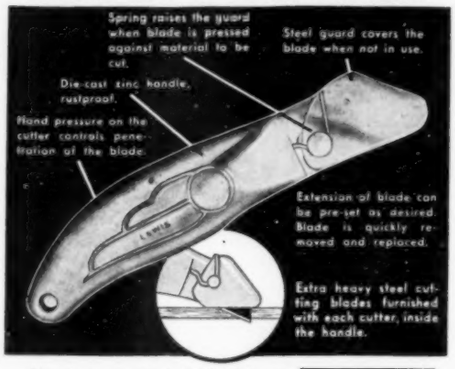
We recommend this material for your serious attention. It goes directly and practically into a subject of major importance to you. It can be put to work immediately with what you have at no added investment.

W. E. Irish.

BREVITY—Identify by IEN - 9834 if you write the maker

*A New Invention . . . Safe . . . Different*

**LEWIS Automatic SAFETY CUTTER**




Here is a new patented knife that cuts swiftly, surely, safely . . . yet protects the user from injury. Always safe because the blade is guarded — always ready to use because there's nothing to adjust.

**$1.50**

**FLASH BOX OPENER CO., Inc.**
52 W. Houston St. · New York 12, N. Y.

BREVITY—Identify by IEN - 9835 if you write the maker

SEALMASTER units are designed and manufactured to give maximum service with minimum maintenance time and expense. Permanently sealed and self-aligning, SEALMASTER units give you 1—dependable service 2—operating economy and 3—less maintenance.

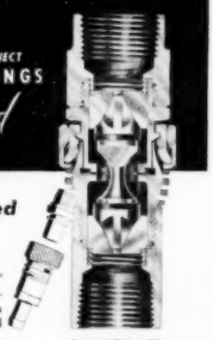
WRITE FOR CATALOG 845 FOR FULL DETAILS ON THE SEALMASTER LINE

BEARING DIVISION
**STEPHEN S-ADAMSON**
MFG. CO.
501 GIDDINGS AVENUE AURORA, ILLINOIS · 1206 ANGELES, CALIF. • BELLEVILLE, ONT.

*Factory Representatives and Dealers in All Principal Cities*

BREVITY—Identify by IEN - 9836 if you write the maker

HERE'S *Why* WIGGINS QUICK DISCONNECT INST-O-MATIC COUPLINGS are *preferred*



TEST No. 1 **FLOW Increased 20%**

At 10 lbs. pressure, the ¼" Inst-O-Matic P1700 coupling delivers 483 cu. inches per minute, as compared with delivery of 404 cu. inches per minute through another make.

CAN YOU USE *quick disconnect* Couplings?

Write for name of nearest representative today.

**Wiggins** INST-O-MATIC COUPLINGS

*Let Wiggins engineers apply their experience to your requirements.*

**E. B. WIGGINS OIL TOOL CO., Inc.,**
3424 E. Olympic Boulevard, Los Angeles 23, Calif.

BREVITY—Identify by IEN - 9837 if you write the maker

...this STAR gives OUTSTANDING PERFORMANCES

LOVEJOY

FLEXIBLE COUPLINGS

Lovejoy Flexible Couplings do a better job of correcting for misalignment and counteracting vibration, shock, backlash and surge. Free-floating load cushions are suspended between heavy metal jaws . . . last two to five years before changing. No lubrication ever needed on Lovejoy Flexible Couplings.

Write for complete Lovejoy Catalog and Quick-Finding Selector Charts.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. LAKE STREET CHICAGO 44, ILLINOIS

Also Mfrs. of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions.

BREVITY—Identify by IEN - 9838 if you write the maker

METAL MUSCLES Cost You Less!

Style K-2 Motor Winch

Lift or Pull with an S-A WINCH

Don't take skilled men from productive work to do common labor. *One man* with an S-A Winch can outperform a large gang. Motorized units hoist up to 6,000 pounds . . . hand types lift 500 to 2,000 pounds. *Save on all handling costs!*

No. 28 Hand Winch

Get the facts. Write for BULLETIN 340

STEPHEN S-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Saco Speed Reducers · SealMaster Ball Bearings · Car Pullers · Winches

231 RIDGEWAY AVE., AURORA, ILLINOIS

BREVITY—Identify by IEN - 9839 if you write the maker

Increase Thread Life with... 'BESTOLIFE

'Bestolife Lead Seal Pipe Joint Compound protects threads against corrosion, prevents galling and seizing, permits full joint make-up, allows easy disassembly of parts. 'Bestolife has been used for twenty years on air, gas and fluid lines, under the toughest possible conditions. It's unconditionally guaranteed or your money back. See your supply dealer or write us for literature and prices.

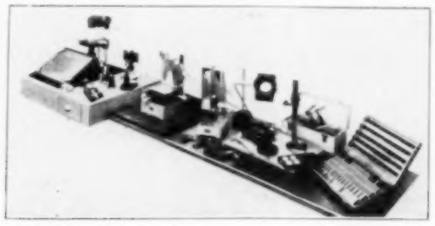
JOBBERS AND DEALERS WANTED

I. H. GRANCELL
7601 EAST NADEAU STREET
LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 9840 if you write the maker

GAGES . . Measuring instrument to inspect production for Armed Forces

Source: GEORGE SCHERR CO.
202 Lafayette St., New York 12, N. Y.



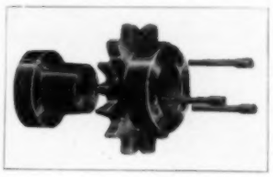
**The company** has assembled a selection of measuring tools and instruments and offers them under the title, "Limited Budget Laboratory". They will cover the required inspection operations to meet Military Specifications MIL Q 5923 (UDSF) for inspection measuring and testing equipment and for production tooling under the respective designations 2.5.1 and 2.5.2. All manufacturers producing parts and finished products for the Armed Forces are required to meet these specifications.

**The equipment** includes a Wilder micro projector with 10 to 100 magnification, a binocular-type three dimensional microscope to inspect surface finish, a toolmaker's microscope for 1 by 1-in. coordinate measurements and thread checking with optical templets, an Opti-Comparitol to measure and inspect precision parts, a set of illuminated magnifiers, five Chesterman height gages with ranges between 12 and 48 in., three sets of Ultra-Chex gage blocks providing accuracy to 0.00001 in. and a collection of micrometers and snap gages.

BREVITY—Identify by IEN - 9841 if you write the maker

DRIVE . . Demountable sprocket and split hub for quick interchange

Source: FORT WORTH STEEL & MACHINE CO.
3602 McCart St., Fort Worth, Texas



**One-piece hub** in split design slides freely on a shaft and carries a driving keyway. It clamps in place when a sprocket is placed on its tapered hub and tightened in position by pullup bolts provided for this purpose. The bolts can be removed from their holes and employed in threaded holes in the sprocket hub to push the sprocket off and release the assembly quickly. The hub is the design previously developed by the company for its Type-QD V-belt interchangeable sheaves. The company is now in position to supply both sheaves and sprockets for quick replacement and interchange.

**Smallest** in the line is for ½ in. pitch sprocket with bore ranging from ½ to 1½ in. and number of sprocket teeth from 19 to 35. Pitch diameter is from 3.038 to 5.578 inches. List price is $7.05 to $12.10 for the sprocket only. The hub adds $3.75. Largest is for 2-in. pitch with 13 to 19 teeth in the sprocket. Bore ranges from 1 to 3½ inches. Pitch diameter is 8.357 to 12.151 inches. Sprocket list price is $40.40 to $56.65. The hub adds $11 to $16.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9842 if you write the maker

TROMBETTA SOLENOID CO.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

BREVITY—Identify by IEN - 9843 if you write the maker

Do You USE or NEED INFRARED HEAT?

THESE USEFUL DATA SHEETS Show you how to SAVE TIME & MONEY with CHROMALOX Electric RADIANT HEATERS

TELL US your application problems and we'll send you valuable information which may lead to improved production at decreased costs on the jobs for which you use or need infrared heat in your plant.

EDWIN L. WIEGAND CO., Industrial Div.
7505 Thomas Boulevard, Pittsburgh 8, Pa.

I need infrared heat for _____

Send me application file on above.

Name _____
Company _____
Street _____
City _____ Zone _____
State _____ IN-21

See Chromalox Heating Units Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 9844 if you write the maker

FREE

EXHAUST FAN CATALOG

Here is valuable data on how to plan effective exhaust fan installations, plus complete specifications of Emerson-Electric Exhaust Fans. Send today for Bulletin No. 256.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

BREVITY—Identify by IEN - 9845 if you write the maker

ALLIS-CHALMERS Induction Heaters

New Film SHOWS HOW TO CUT COSTS

Annealing • Brazing • Soldering • Hardening

GET IDEAS on improving products, speeding production, cutting costs. New 16 mm. color-sound film shows on-the-job applications of induction heating.

See how one manufacturer raised production to 3600 units per hour! See many other case histories.

Arrange for free showing — fill out coupon below. Get new solutions for heating problems. Send the coupon today!

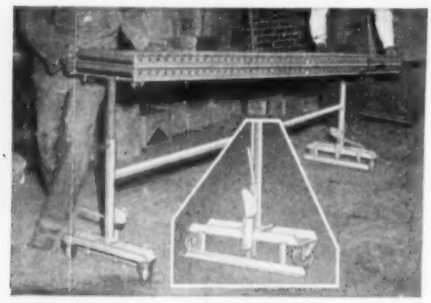
ALLIS-CHALMERS

ALLIS-CHALMERS, 909A SO. 70 ST.
MILWAUKEE, WIS.

☐ Please send print of 16 mm. color-sound film "Induction Heating, Industry's Modern Tool."
☐ Please send me booklet describing film.

Name _____ Title _____
Firm _____ Address _____
City _____ State _____ A-3433

BREVITY—Identify by IEN - 9846 if you write the maker



## PORTABLE WHEEL and ROLLER GRAVITY CONVEYORS

**Save Money on Your Handling Jobs**

Standard 5' and 10' sections and 45° and 90° curves on portable tripod stands or portable section stands (as illustrated) with or without "Pelican" Floor Lock. (see insert).

Ideal for warehousing, loading and production line use. Easy to handle and move.

POWER UNITS
Belt type Horizontal and Floor-to-Floor "Power Helpers"

Live Roller CONVEYORS

ASK FOR FOLDER 1251

METZGAR CO.
417 DOUGLAS STREET, N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 9847 if you write the maker

*FAST OPERATION . . . CONSTANT SERVICE*

## AMERICAN MONORAIL *CRANE*

This new American MonoRail Crane is ruggedly built to handle loads up to 10 tons at operating speeds of 500 feet per minute. Articulated trolleys assure perfect alignment of trucks for smooth crane travel.

Let an American MonoRail engineer tell you how you can get fast, constant service not only on the craneways, but also through adjacent areas by way of interlocking MonoRail systems.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 9848 if you write the maker

## POSITIVE TOOL STEEL IDENTIFICATION

WITH THIS NEW

*12-Color Chart!*

Now . . . to help you eliminate costly tool steel mix-ups, Carpenter Matched Tool & Die Steel bars are painted FULL LENGTH with distinctive colors! This *practical* marking system, along with this new Wall Chart printed in colors that match the completely-painted bars, enables you to . . .

QUICKLY IDENTIFY TOOL STEELS!
REDUCE YOUR OWN MARKING COSTS!
AVOID COSTLY STOCK MIX-UPS!
SIMPLIFY INVENTORY-TAKING!

Tool Steel Selector and Identification Wall Chart—21" x 30"—printed in *12 colors!* To cash-in on this new color-marking system, send for your Wall Chart, *now*. Just mail the coupon.

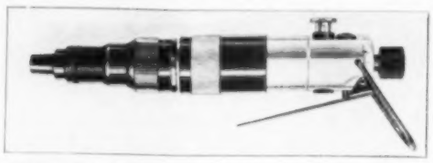
THE CARPENTER STEEL COMPANY
151 WEST BERN STREET • READING, PA.
Please send me the free Tool Steel Selector and Identification Wall Chart.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

BREVITY—Identify by IEN - 9849 if you write the maker

## SCREW DRIVING . . Portable tool, pneumatic drive, also will set nuts

Source: ARO EQUIPMENT CORP.
107-11 Madison St., Bryan, Ohio



**Model 7500** is new design in the company's line of portable pneumatic screw drivers featuring a push-button valve for quick change from forward to reverse action. Rotation is in reverse when the operator presses a button on the housing. It returns immediately to forward motion when he removes his thumb. An adjustable clutch can be set to required torque at which point the jaws will disengage.

**Capacity** is No. 0 to No. 8 machine screws. Overall length is about 7¾ in. with outside diameter at 1⅜ in. and weight at 1¼ pounds. Operation is at 1,800 rpm. under control of a built-in speed regulator which forms part of the drive.

BREVITY—Identify by IEN - 9850 if you write the maker

## WRENCH . . Bolt clearance sockets, eight sizes, range 3/16 to 7/16 inch

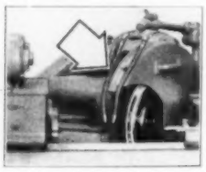
Source: BONNEY FORGE & TOOL WORKS
721 Meadow St., Allentown, Pa.

**The company** announces addition of a new series of ¼-in. square-drive, 2-in. depth bolt-clearance sockets to eliminate the need for a short extension in applications difficult of access. The sockets are available singly or in a set of eight progressive sizes. Series BL is the designation.

BREVITY—Identify by IEN - 9851 if you write the maker

## TUBE . . Flexible metal to carry oil, coolants, solvents

Source: VERMONT FLEXIBLE TUBING CO.
5-9 Park Ave., Lyndonville, Vt.



**Sealflex** trade names a new tension-wound metal tube that is liquid tight. It can be employed to carry various liquids without leaking and at the same time permit bending and flexing to follow the movements of a machine. The tube is available with male or female coupling, nozzles, stop cocks, unions to specification. Sizes range from ⅛ to ¾-in. inside diameter. Length is subject to specification. After the tube has been bent to a given position, it will stay in that position until it is moved mechanically.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9852 if you write the maker

## TOOL CRIB CONTROL

**New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.**

*How it works to—*

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

**All described in Folder A-510 IEN**

Complete control of your tools will save headaches in the months ahead.

*Write for your copy today to:*

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 9853 if you write the maker

## THE di-acro NOTCHER

**Duplicates Precision Notches WITHOUT DIES!**

The new precision DI-ACRO Notcher eliminates the need for punch press and dies on many production notching operations. It is also ideal for experimental work as it can be quickly adjusted for any size or shape notch. Many straight shearing operations can also be performed with this flexible unit.

**CUTS CLEAN — NO BURRS OR ROUGH EDGES**
The powerful DI-ACRO Notcher has an exclusive roller bearing cam design which provides a tremendous pressure with a small amount of effort. The precision-ground Vee-shaped ram and blades of alloy tool steel assure clean cuts and permanent accuracy.

**LARGE CAPACITY.** The DI-ACRO Notcher cuts 90° notches up to 6" by 6" in 16 gauge steel in one operation. Larger notches, and wider or narrower angles, can also be obtained.

**SEND FOR 40-PAGE CATALOG.**
Gives full information on all six "DIE-LESS DUPLICATING" production boosters—DI-ACRO Benders, Brakes, Shears, Rod Parters, Punches, Notchers—with many examples of accurately duplicated parts.

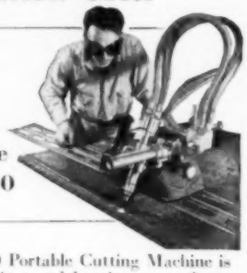
DI-ACRO is pronounced "DIE-ACK-RO"

DI-ACRO DIE-LESS DUPLICATING
O'NEIL-IRWIN MFG. CO.
318 8th Avenue, LAKE CITY, MINN.

BREVITY—Identify by IEN - 9854 if you write the maker

## *Speed Production . . . Cut Fabrication Costs*

**With this Low-Priced Oxy-Acetylene Cutting Machine OXWELD CM-30**



The OXWELD CM-30 Portable Cutting Machine is for cutting straight lines and bevels on metals up to 4 in. thick. It also will cut circles from 2¾ to 96 in. in diameter, and can be hand guided for simple shapes.

*Convenient to Use*

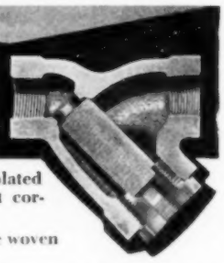
The CM-30 can be operated either on lightweight track for straight-line cutting, or on the work itself for cutting circles.

Write for a descriptive folder.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN - 9855 if you write the maker

## A Better STRAINER



- *BODY*—is cadmium-plated for protection against corrosion.
- *SCREEN*—High-grade woven monel wire basket.
- *SCREEN CAP*—Easily removed. Machined face and spark-plug-type gasket provide tight joint. Cap and screen come out together. Screen automatically aligns when replaced.
- *SIX SIZES.* ½" to 2", for pressures up to 600 lbs. Reasonably priced.

- Many Thousands in Service
- Sold by nearly 150 Mill Supply Houses

*See Your Supply House or Send for Bulletin S-201*

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY STRAINERS

BREVITY—Identify by IEN - 9856 if you write the maker

**10 IMPORTANT FEATURES**

**4 EXCLUSIVE★**

- ★ FOUR STAGE FILTRATION
- ★ AIR JET CLEANERS
- ★ AIR LEAVES CLEAN SIDE OF EACH CURTAIN
- ★ WOVEN MESH FILTERING MEDIUM

**Cushion-mounted motor and Drive Mechanism • Momentary Contact Switch • Shear Pin in Drive Shaft • Control Mechanism arranged for integral or remote control mounting • Gear and Roller Chain drive • Nation wide service.**

HIGHEST EFFICIENCY OF ANY MECHANICAL TYPE AUTOMATIC FILTER

**DOLLINGER CORPORATION** 3 Centre Pk., Rochester 3, N. Y.

DOLLINGER STAYNEW FILTERS

BREVITY—Identify by IEN - 9857 if you write the maker

**PEERLESS**
**HIGH EFFICIENCY**
**GENERAL PURPOSE**
**FRACTIONAL HP PUMPS**
*EASIEST TO INSTALL, OPERATE AND MAINTAIN*

**SIZES:** ¼ TO 1½ HP • HEADS UP TO 110 FT. • **CAPACITIES:** UP TO 65 GPM **DRIVES:** CLOSE COUPLED ELECTRIC OR FLEXIBLE COUPLED ON COMMON BASE

**FEATURES:** Designed for vertical, horizontal or intermediate angle installation without affecting efficiency. Motors are drip proof, cool running. Drive shaft is stainless steel. Enclosed impeller. Four positions of volute provide flexibility in connecting piping. Equipped with shaft seal; no packing to change. Water deflector shields motor bearings. Highly efficient; extremely rugged and dependable. Available out of stock at Los Angeles or Indianapolis. Fully described in Bulletin B-2300.

ALSO AVAILABLE IN INTEGRAL HP MODELS UP TO 150 HP AND UP TO 5500 GPM — *Write for Bulletin B-2300*

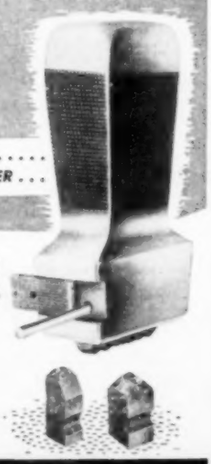
**PEERLESS PUMP DIVISION**
**FOOD MACHINERY AND CHEMICAL CORPORATION**
Factories: Los Angeles, California, and Indianapolis, Indiana.
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico.

BREVITY—Identify by IEN - 9858 if you write the maker

USE "SAFETY" MARKING TOOLS FOR

**SAFE-FAST MARKING**

*"WEDGE-GRIP" ..... STEEL TYPE HOLDER ...*



- **NO CHIPPING**
- **NO MUSHROOMING**

RAPID TYPE CHANGE FEATURE

Here's the ideal hand style marking tool for your applications where fast changing of characters is required. It has gained widespread popularity through the safety factors of Mecco "Safety" Steel and Wedge-Grip. Prompt shipment on orders. Write today.

**M.E. CUNNINGHAM CO.**
SAFETY STEEL STAMPS
99 E. Carson Street — Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 9859 if you write the maker

## WEIGHING . . Electronic scale is actuated by Baldwin load cell

Source: BALDWIN-LIMA-HAMILTON CORP. Paschall Post Office, Philadelphia 42, Pa.

**New application** of the company's Type SR-4 bonded resistance-wire strain gage in load-cell assembly, previously described IEN-4139-51, applies with electronic amplifying and indicating equipment to read load suspended from a crane hook. The load cell is built into the hook and connects electrically to a wheel-mounted indicator that receives power from a shop circuit. The connecting cord between the load cell and the indicator winds into and out of a retriever. The indicator shown in the illustration reads to 50 ton. Two other scales are available to read between 50 and 100 ton and between 100 and 150 ton.

**Slight variation** in length of the load cell, due to compression, results in length change in the strain gage which forms one leg of a Wheatstone bridge. This unbalances the bridge circuit and provides the minute voltage that is amplified and employed to operate the indicator.

BREVITY—Identify by IEN - 9860 if you write the maker

## CONVEYING . . Belt idler assemblies, factory lubricated, permanently sealed

Source: TRANSALL INC. 129 N. 11th St., Birmingham 4, Ala.

**Double seal design** employs synthetic rubber at two positions on each side of each ball bearing in this new conveyor idler. A special grease-type lubricant is added during assembly. It holds its set viscosity in a temperature range between minus 90 and plus 200 deg. F. The lubricant does not melt until temperature reaches 375 deg. F. It is inhibited against oxidation, emulsification and will not saponify. There is no need for field lubrication during the service life of the idler assembly.

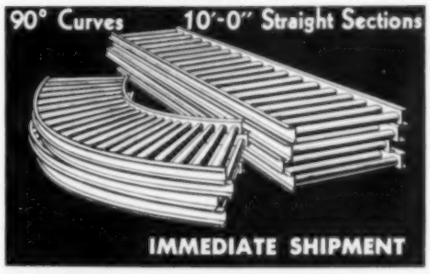
**The bearings** are mounted on solid roll shafts supported at each end by formed-steel uprights in welded position on a steel plate. The welding is performed in jigs for exact dimension duplication.

**Several types** of idler are included in the line to mount 4 or 5-in. steel rolls, 5 or 6¼-in. rubber-disc roll assemblies for service where impact is a factor. Two heights are standard and Lo-Head. Assemblies with self-aligning guide rolls and flat units for the return run of a belt are included in plain and self-aligning design. Belt width ranges from 14 to 48 in. standard, 14 to 36 in. in the Lo-Head assembly. List price for a standard troughing idler, Type TS, with 5-in. steel rolls for a 14-in. belt is $27.45.

**Catalog 203**, 12 pages, and a 4-page price list provide illustrated description, specifications, net prices to the user.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9861 if you write the maker




**STOCK ROLLER CONVEYOR**

How many sections do you need? Offered in several sizes for average duty conveying. Roller spacing 4" or 6" centers. Roller lengths of 12", 16" and 20". Capacity 75 lbs. per ft. with supports on 10'-0" centers and 380 lbs. per foot with supports on 5'-0" centers. Both stationary and portable supports available. Write for literature.

*Check your needs today*

**Logan Conveyors**
LOGAN CO., 200 CABEL ST., LOUISVILLE, KY.

BREVITY—Identify by IEN - 9862 if you write the maker

## When detecting temperature by radiation method . . .

**Quick-sighting optical system** lets user select desired target easily, and then check the sharply-defined area which the Rayotube sees. Increased sharpness is also of benefit when radiation comes from end of closed tube.

**Hermetically sealed construction** at lens, window, and leadwires keeps out dust and gases; guards accuracy even with high or rapidly changing Rayotube "body" temperatures.

Details on request. Leeds & Northrup Company, 4905 Stenton Avenue, Philadelphia 44, Penna.

LEEDS & NORTHRUP CO.

Jrl Ad NS3(1b)

BREVITY—Identify by IEN - 9863 if you write the maker

*if you ship in cans...*

then you'll be interested in our new booklet on the Rex Roto-Brush Can Cleaner and Drier. This unique new machine is proving to be a remarkable cost cutter in a wide variety of canning operations. Here are some of the profitable advantages you get by installing a Rex Roto-Brush:

1. Improved Product Appearance
2. Simplified Labeling
3. Important Space Savings
4. Speeds up to 300 cans per minute

*For all the details, just mail the coupon below.*

CHAIN BELT REX COMPANY — FOOD PROCESSING EQUIPMENT

50-204

CHAIN BELT COMPANY
1675 W. Bruce Street, Milwaukee 4, Wis.
Please send me a copy of Bulletin 49-40.

NAME.....
COMPANY..... DEPT.....
STREET.....
CITY..... STATE.....

BREVITY—Identify by IEN - 9864 if you write the maker

**SAFE • STRONG • SECURE**

Before specifying or purchasing open steel flooring check these exclusive features of Blaw-Knox Grating...

1. SAFETY underfoot at all times assured by twisted steel cross bars.
2. STRENGTH that only rigid "one piece" Electroforged construction can provide.
3. SECURITY—no wobble, tilt or rattle caused by loose or lost screws, nuts, bolts.
4. EASY to maintain and paint . . . no sharp corners to clog with dirt.
5. MAXIMUM open area for light and air.

*For complete data on Blaw-Knox Electroforged Steel Grating and Stair Treads write for Bulletin 2365.*

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

**BLAW-KNOX** *Electroforged®*
STEEL GRATING & STAIR TREADS

BREVITY—Identify by IEN - 9865 if you write the maker

BREVITY—Identify by IEN - 9866 if you write the maker

# REDUCE COSTS!

With . . . TRICO KLIPLOK CLAMPS FOR FUSE CLIPS

They Lock Like A Vise!

- INCREASE PRODUCTION
- STOP HEATING AND ARCING AT CONTACTS
- ELIMINATE BURNT FUSES AND CLIPS
- PREVENT UNNECESSARY SHUTDOWNS
- EASILY AND QUICKLY INSTALLED

Use Them Everywhere.
TRICO "Kliplok" TEST CLAMPS

Clamp flat or round objects. Attached in a jiffy & "stay put." Carry heavy currents.

Handy for temporary connections, meter and motor testing, jumpers, battery charging, etc. Seven sizes 0 to 300 Amps.

WRITE FOR BUL. No. 7

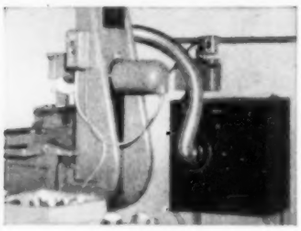
TRICO "Kliploks" supply the needed pressure for easy flow of current . . . Pay for themselves many times over through great savings in power, fuses and clips, maintenance costs. Use them on old equipment to stop existing trouble . . . on NEW equipment before trouble starts.

WRITE FOR FREE BULLETIN No. 6

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

BREVITY—Identify by IEN - 9867 if you write the maker

# STOP DUSTS



Instantly *with* DUSTKOP

Available from stock of 22 standard models
300 cfm to 10,000 cfm

for: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

**Ask for Catalog 605-2. Describe dust problem for recommendation by return mail — no obligation.**

AGET-DETROIT CO.
401 Main Street Ann Arbor, Michigan

BREVITY—Identify by IEN - 9868 if you write the maker

## INDEXING . . Rotary table, air operated, 4 to 24 station stops

Source: AIR-HYDRAULICS INC.
809-13 Belden St., Jackson, Mich.

**List price** is $495 for this new 10-in. rotary air-operated table in which a built-in 2½-in. power cylinder provides the indexing action in connection with station stops for 4, 6, 8, 12 or 24 positions in 360 degrees. Operation is on 50 to 150-lb. air pressure. Exhaust air from indexing can be employed to strip the work.

**Applications** include use on punch presses, drilling machines, broaching machines and to handle parts or fixtures for various production operations. Normal movement is clockwise. The table remains in locked position following each indexing movement. It is mounted on a radial and a thrust ball bearing. It can be set up horizontally or vertically.

BREVITY—Identify by IEN - 9869 if you write the maker

## HEAT TREATING . . Powdered material to case harden parts made of soft steel

Source: EUTECTIC WELDING ALLOYS CO.
40-42 172nd St., Flushing 58, N. Y.

**$4.50 to $3.50 per pound**

**Instant Hardener** trade names new powdered material into which steel parts are dipped after they have been heated to a cherry red. The material produces a case-hardening action when the dipped work has been withdrawn from the powder, heated to a cherry red and then quenched in water. Cutting tools and parts subject to wear can be treated. The material is suited particularly for emergency hardening to produce a cutting tool or a hardened surface when only mild steel is available.

**Two types** known as No. 1 and No. 2 are packaged in 2, 5 and 50-lb. containers. No. 2 contains a quantity of hard-facing material mixed into the heat-treating powder.

BREVITY—Identify by IEN - 9870 if you write the maker

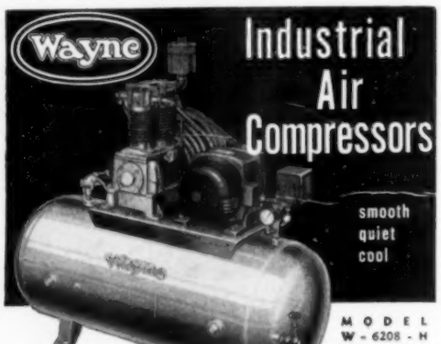
## TURBINES . . Standardized bucket for one and two velocity stage turbines

Source: SCHELLENS-TRUE CORP.
19 Main St., Ivoryton, Conn.

**The company** announces standardization of a series of its steam turbine buckets in two widths, seven blade sections, two root sections for skirted type bucket and one root section for packer type buckets. The standard line is in addition to specification buckets which the company is prepared to manufacture on its specialized equipment. There is no tool charge for the standard series.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9871 if you write the maker




send for CATALOG

**INCREASE PRODUCTION with air**
**If your present source of air is overloaded install small units in each department needing air. Supplies air at higher pressures or saves running large machine when the department works overtime. Completely packaged units of power . . . Wayne Compressors are available from ⅓ H.P. to 10 H.P. Ask for catalog.**

INDUSTRIAL LIFTS • HOSE REELS

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO, CANADA

BREVITY—Identify by IEN - 9872 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

*Your inquiries are invited.*

DAYTON ROGERS *Manufacturing Company*
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 9873 if you write the maker

# 88% EASIER LIFTING ON INDUSTRIAL JACKING JOBS!

WITH SIMPLEX HEAVY DUTY SCREW JACKS

**An entirely new principle on Simplex Screw Jacks cuts friction 88%—gives you faster, easier lifting. Concave inner surface of non-slip cap rests on large chrome-moly steel ball in hard steel ball-seat. Can't flatten under load. Cap has 9 degree self-leveling float—won't slip out under load.**

**Other features make these Simplex jacks safer on heavy-duty jobs. Tough, malleable iron housing. Broad malleable iron base for stability. Safety peephole in base. Color indicates jack capacity. High carbon steel bars 40% stronger than ordinary bars.**

*21 models with 4-way head—10 models with ratchet head. Capacities from 10 to 24 tons. Ask for new illustrated bulletin: Industrial 48.*

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
1012 South Central Avenue, Chicago 44, Illinois

BREVITY—Identify by IEN - 9874 if you write the maker

# TAKES THE POUNDING OF MILLIONS OF FEET!

PABCO MASTIPAVE

AMERICA'S No. 1 LOW COST LONG-LIFE FLOOR COVERING

**Here's what the ILLINOIS CENTRAL RAILROAD has to say about PABCO MASTIPAVE . . .** "Two years ago we covered the wooden flooring leading to the train platforms in our Randolph Street suburban passenger station with Grip-Tread Mastipave. More than 50 million pairs of feet have walked over this flooring and it is still giving excellent service.

"Before using this covering we had a problem with passengers slipping on the wooden flooring when it became wet. Mastipave has made a real safety contribution in that it has eliminated slipping hazards."

**25 years of proved performance!** Pabco Mastipave—both regular and non-slip Grip-Tread types—costs little, looks good, wears even better! Available in roll goods or tiles.

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

(Mail to Dept. E, nearest office)

PABCO PRODUCTS INC.
New York 16 Chicago 54 San Francisco 19

BREVITY—Identify by IEN - 9875 if you write the maker

# WANTED... for more of industry's finest products!

You can see and feel the big difference between P-K Ground Thread Socket Set Screws and ordinary cut thread screws. There are no finer screws made, regardless of the standard of comparison. More manufacturers are specifying Parker-Kalon Socket Screws than ever before. P-K* production is going all-out to meet this mounting demand. For D. O. or other assemblies, set your standards by P-K quality. Parker-Kalon Corporation, 200 Varick St., New York 14.

IF IT'S P-K IT'S O.K.

**PARKER-KALON*** *cold-forged* **SOCKET SCREWS**

*TRADE MARKS REG. U.S. PAT. OFF.

BREVITY—Identify by IEN - 9876 if you write the maker

*THE LEWYT—"world's most modern vacuum cleaner"—uses* PLIOBOND *and oven bonding to unite Buna-S synthetic ring and cadmium-plated steel stamping (inset) for a permanent, flexible bond. Photo courtesy of The Lewyt Corp.*

# "Only satisfactory bond-" reports *Pliobond* user

IN the Lewyt Cleaner a synthetic rubber molded grip is bonded to a cadmium-plated steel stamping—shown in photograph. A number of other materials and methods were tried, but the manufacturer reports only PLIOBOND provided a satisfactory bond. After curing, the PLIOBOND junction must stand up under constant torque and pulling stresses, as the user pulls the Lewyt Cleaner from place to place by its hose. Yet the cleaner glides easily, swings effortlessly—and the PLIOBOND joint holds and holds.

Wet bonding, reactivation bonding, or "hot" bonding can be used with PLIOBOND. It will almost literally stick anything to anything—with a lasting, long-life flexible bond. For full details on this light-tan colored, rubber-like thermoplastic, write:

**Goodyear, Chemical Division**
**Akron 16, Ohio**

**GOODYEAR**

*We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday—ABC Network*

Pliobond—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

BREVITY—Identify by IEN - 9878 if you write the maker

## DRIVE . . Link type V-belt presents double V leather driving faces

**Source: GRATON & KNIGHT CO.**
**324 Franklin St., Worcester 4, Mass.**

**Steel connectors** equipped with cross pins join the individual links in this new V-belt. The links are made of two fiber sections faced with oak-tanned leather to provide a double bevel that conforms to standard V-belt sheaves. The belt can be employed on a reverse drive to ride over sheaves on first one face and then the other in position as that shown in the illustration. It can be turned over on straight drives, after the segments have been worn on one face, to present new driving faces.

**Six sizes** in the line have average pitch length from about 1⅛ to 2 inches. These sizes will ride over pulleys measuring 3½ to 8 in. in minimum diameter. Rating is 0.9 to 5.4 hp. at 1,000 fpm. and 180-deg. arc of contact. Maximum speed recommended is not greater than 3,500 fpm.

BREVITY—Identify by IEN - 9879 if you write the maker

## MARKING . . Cloth labels, plastic faced, adhesive backed, in rolls

**Source: TOPFLIGHT TAPE CO.**
**114-18 E. Market St., Room 12, York, Pa.**

**Sample on request**

**New tape** with a white cloth body is plastic faced and impregnated and carries a self-adhesive backing. It is printed in one or two colors with information as specified for subjects such as coding, instruction, warning. The labels are in continuous roll to 2,160 in. in length and width to 2 inches. The tape is resistant to attack by acids and alkalis. It can be used indoors or outside. It retains its grip in water.

BREVITY—Identify by IEN - 9880 if you write the maker

## TRUCKS . . Self engaging coupler is made of steel with spring loaded jaw

**Source: COLSON EQUIPMENT & SUPPLY CO.**
**1315-19 Willow St., Los Angeles 13, Calif.**

**Cast steel** is employed in the construction of this new industrial truck coupler. Its two parts are made up of a spring-loaded jaw and counter-balanced bail. The two will connect when pushed together. A foot-operated latch is employed to disengage them. It can be operated from either side. The bail holds in couple position regardless of the truck angle. The spring-loaded jaw will not disengage on a ramp. The units can be welded or bolted to a truck frame.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9881 if you write the maker

# RUEMELIN BLAST GENERATORS

A practical low-cost sand blast used by plant engineers for maintenance work. Cleans rust, paint, scale from piping, valves, fittings, renovating buildings, stripping paint from trucks, busses, trailers, railroad cars, structural steel, storage tanks, ship hulls, etc. Can be fitted with Wet Adapting Nozzle for eliminating dust.

*Write for Bulletin 36 C*

**RUEMELIN MFG. CO.**
3863 N. Palmer St.
Milwaukee 12, Wis.

*Manufacturers and Engineers*
SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS.

BREVITY—Identify by IEN - 9882 if you write the maker

# How to save Labor and Money by Centralizing Lubrication

FOR more than 20 years, Farval has been saving manpower and money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Bulletin 25 gives you the facts and figures to apply to your own lubrication problems. The Farval Corporation, 3258 East 80th St., Cleveland 4, Ohio.

**Write for *FREE* Bulletin 25**

BREVITY—Identify by IEN - 9883 if you write the maker

# Calling all users of Speed Reducers!

**Get the new Cleveland Book *FREE***

Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

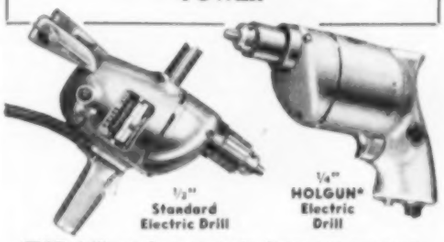
New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

**CLEVELAND Worm Gear *Speed Reducers***

BREVITY—Identify by IEN - 9884 if you write the maker

# DRILLING PROBLEM?

Switch to BLACK & DECKER POWER



½" Standard Electric Drill

¼" HOLGUN* Electric Drill

FOR drills to fit your needs, it pays to see your nearby Black & Decker Distributor *first!* You get an unmatched choice of Drill models — capacities from ¼" to 1¼" — choice of handle arrangement — choice of speed, power and price in most capacities. And you get powerful Black & Decker-built motors, full ball-bearing construction, extra-tough parts, husky housings, perfect balance. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

**Black & Decker** PORTABLE ELECTRIC TOOLS

*Trade Mark Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 9885 if you write the maker

**The Cement In This Hopper Flows Freely**

V-55 Vibrator keeps cement in this Weigh Hopper from arching and plugging. Also, assures "true" flushing of hopper for accurate weighing.

## SYNTRON

"Pulsating Magnet"

## ELECTRIC VIBRATORS

**With Variable Control of Power**

3600 controllable vibrations per minute keep the most stubborn materials flowing freely through bins, hoppers, chutes and screens . . . WITHOUT THE HAMMERING AND RODDING AND POKING THAT WASTES MANPOWER AND DAMAGES EQUIPMENT. Vibrators for 1 cu. ft. hoppers up to large storage bunkers.

Write To

**SYNTRON CO.**
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 9886 if you write the maker

## "Play Safe" – stop your cranes with Wagner Crane Bridge Brakes

Wagner Hydraulic Brakes provide even the heaviest cranes with controlled deceleration and smooth, precise stops . . . as accurate and easy as braking an automobile . . . and just as safe.

If your cranes are not equipped with Wagner Brakes, we can show you how simple it is to install a modern hydraulic system. If you now have old-style Wagner Brakes, your system can be quickly modernized with our complete conversion kits. Bulletin IU-40 gives complete information—write for your copy.

### Only Wagner Hydraulic Crane Bridge Brakes give you all these features:

- Two Types—Four Sizes—Cover the Field
- New Remote Control Bleeder
- New Self-Centering Device
- New Systems easy to install
- Old Systems easily modernized

**Wagner Electric Corporation** 1891 1951

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 9887 if you write the maker

## MEN SCARCE? 2 BIN-DICATORS OFTEN RELEASE ONE MAN FOR OTHER WORK

**BIN-FLO** AERATOR UNITS KEEP BULK MATERIALS MOVING

BIN-DICATORS indicate level of materials in bins, silos, hoppers, chutes, etc., and report overfeed, choking, underfeed, almost full, almost empty, etc., to central control point by visible or audible signals. Also, automatically control operation of machinery as indicated by any of above conditions.

Always on the job—and doing it. Low first cost; negligible operating cost. Used on over 100 materials. Fully guaranteed. Write for free book.

**BIN-FLO** Aerator Units in bins, hoppers, chutes use low pressure air to keep materials moving at points of restricted flow.

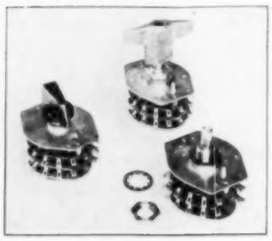
NEW 20 PAGE BOOK FREE

**THE BIN-DICATOR CO.**
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 9888 if you write the maker

## SWITCH . . Rotary selector unit, 16, 24, 30 position design available

Source: UNITED STATES INSTRUMENT CORP.
407-11 Broad St., Summit, N. J.



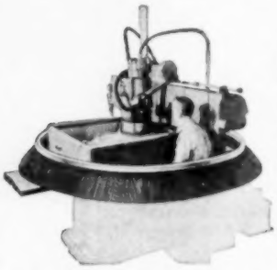
**Type JA** is a new multi-deck rotary selector switch with contacts rating 3 amp. at 110-volt ac. on make and break. Continuous load-carrying capacity is 25 amp. on 110-volt ac. The switch design is shorting type with make before break. Two-deck assembly is standard but a required number of additional decks can be specified to order.

**Beryllium copper** contact arms with silver contacts form two independent circuits in the rotary-contact assembly. Silver overlaid on bronze with one-piece contact and solder-lug terminals is employed in the stationary contact. The indexing mechanism consist of beryllium-copper cam and roller arms with case-hardened steel rollers on a stainless-steel shaft that rides in a bronze shaft bearing. The plate is made of brass, O-rings seal both the shaft and the mounting bushing.

BREVITY—Identify by IEN - 9889 if you write the maker

## BRUSH . . Strip type design confines spray on a grinding machine

Source: FULLER BRUSH CO.
3583 Main St., Hartford 2, Conn.



**New application** for the company's Fullergript strip-type brush is on a vertical surface-grinding machine. The brush surrounds the grinding operation and confines spray thrown by centrifugal action from the wheel. The brush is standard design by the company and is available in straight, curved and coiled assemblies as shown in detail in the company's 36-page catalog, "Fullergript Power Driven Brushes," available upon request.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

**Give enough!**

### YOUR HELP NEEDED

The Community Chests of America have a goal of $200 million this year to meet some 14,000 services for local community health, welfare and recreation. A wearer of the Red Feather soon will be asking for your help to make these services possible. Whatever you give in this drive will benefit you and your neighbors.

BREVITY—Identify by IEN - 9890 if you write the maker

## The Simplest Filter Cartridge Lasts the Longest . . . Twice as Long

**Cartridge renewals** are cut at least in half with Cuno Micro-Klean. And throughout its service life, Micro-Klean is guaranteed for specific performance.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevents shrinking, swelling, channeling. When replacement is required—it's *quick* and *clean*. Housing easily disassembled.

Guaranteed removal of *all* dirt: 10, 25, or 50 microns in size plus a large percentage down to 1 micron. Write for Bulletin MK-035. Cuno Engineering Corporation, Dept. 699M, South Vine Street, Meriden, Connecticut.

**CUNO** *Fluid Conditioning*

Removes More Sizes of Solids from More Types of Fluids

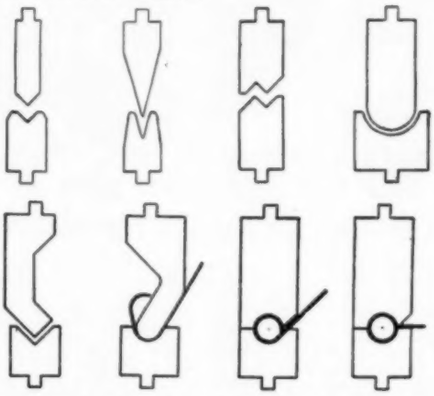
BREVITY—Identify by IEN - 9891 if you write the maker

## PRESS BRAKE FORMING DIES

*PROMPT DELIVERY*

**Any Metal—any gage—to fit any make of machine**

*Here are a few examples:*



**RAFTER MACHINE COMPANY, INC.**
SINCE 1917

249 Stephens Street Belleville 9, N. J.

COLD ROLL FORMING MACHINES AND GANG SLITTERS

BREVITY—Identify by IEN - 9892 if you write the maker

## A STEADY 102° BELOW FREEZING

(Photo from Refrigerating Engineering)

**CALLED FOR CONTINUOUSLY VARIABLE SPEEDS AND STABLE OUTPUT TORQUE**

OILGEAR *Fluid Power*

## SOLVED THIS PROBLEM

The wide range of installations that demonstrate the reliability, scope and ease of control of Oilgear Fluid Power Drives and Transmissions grows daily. A case history from REFRIGERATING ENGINEERING, official journal of the American Society of Refrigerating Engineers, telling how a research laboratory chose Oilgear Transmissions and obtained continuous, dependable performance without delay, is another chapter in that story.

Demands for tests of materials at extreme temperatures called for equipment able to hold testing room temperatures stable at all times—usually at 70° F. below zero. It also had to refrigerate test materials as rapidly as possible. This meant a system of varying compressor speeds automatically—so as to compensate for variations in heat load.

Previous experience had shown that . . . the use of direct current motors, or variable speed drives of the belt-and-pulley type, under automatic control, was not entirely reliable and required considerable servicing.

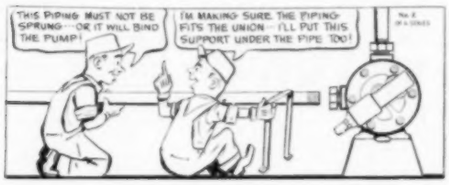
Then Oilgear Fluid Power Transmissions were adopted. These transmissions provide continuously and automatically variable output speed and maximum output torque at all operating speeds. Nearly two years' experience reveals that temperatures have been maintained within ±½° F. of the desired figure over long periods of time, that no attendant is required except for a few minutes' daily routine inspection, that the Oilgear drives are completely reliable.

Thus the evidence grows that if you are tired of machine or process drives and transmissions that don't stand up, if you want simpler, better, more productive and dependable drives, if you have problems not yet solved, it will pay you to contact Oilgear Fluid Power engineers. THE OILGEAR COMPANY, 1567 W. Pierce St., Milwaukee 4, Wisconsin.

**Oilgear Fluid Power**

PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS AND VALVES

BREVITY—Identify by IEN - 9894 if you write the maker




HOW TO GET THE MOST WORK OUT OF YOUR VIKING PUMPS

In making suction and discharge pipe connections on a Viking Rotary Pump be sure that no strain is imposed on the pump casing by the pipe. Properly installed, the shaft of a Viking pump should turn easily by hand. If this is not possible you have either sprung the pump in making the pipe connections or with the foundation bolts.

For valuable help in installing, operating and maintaining your pumps, write today for your FREE copy of the Viking Service Manual F. It's a handy, illustrated booklet filled with practical information. Get EXTRA wear out of your pumps by giving them EXTRA care. The Viking Service Manual F tells you how.

VIKING AN HONORED NAME IN PUMPING

Viking PUMP COMPANY Cedar Falls Iowa

BREVITY—Identify by IEN - 9895 if you write the maker

SAVE TIME MONEY MATERIAL WORK

Chromalox Catalog 50 Shows You

The Chromalox Catalog is filled with valuable data on the use of electric heat to lower costs and increase production in your plant. It shows over 15,000 types and sizes of electric heaters for heating air and other gases, liquids, viscous fluids and solids; for heating dies, molds, platens, moving parts and other equipment. A section is devoted to the new all-metal radiant heaters for baking, curing, drying and other infrared applications. Put Chromalox Electric Heaters to work in your plant.

WRITE FOR YOUR COPY OF CHROMALOX CATALOG 50 TODAY.
EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Radiant Heaters Advertisement, Page 5

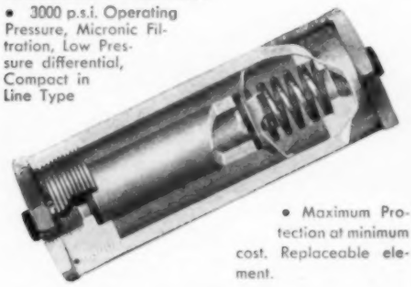
CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 9896 if you write the maker

Protect
HYDRAULIC EQUIPMENT
WITH HIGH PRESSURE
MICRONIC FILTERS

- 3000 p.s.i. Operating Pressure, Micronic Filtration, Low Pressure differential, Compact in Line Type



- Maximum Protection at minimum cost. Replaceable element.

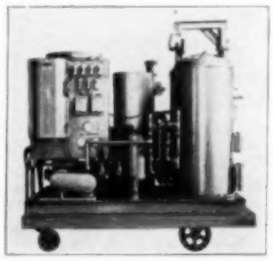
West Coast: H. E. Webb
918 N. Kenilworth Ave., Glendale, Calif.

WATERMAN ENGINEERING Company
721 CUSTER AVENUE • EVANSTON, ILLINOIS

BREVITY—Identify by IEN - 9897 if you write the maker

OIL CONDITIONING . . Mobile unit to treat contaminated insulating oils

Source: HONAN-CRANE CORP.
510 Indianapolis Ave., Lebanon, Ind.



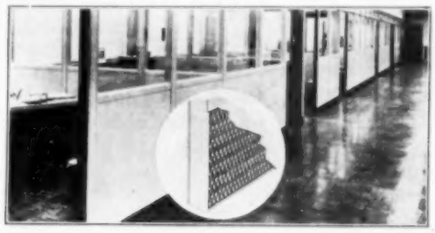
A filter, two Cranite purifiers, an electric oil heater, a vacuum dehydrator with associated pumping and control equipment are assembled on a four-wheel trailer to make up this new mobile Purivac oil-conditioning unit. It can be moved to an installed transformer and connected there to recondition the oil while the transformer remains in service. It applies with any container in or out of service, from which it can draw and treat the oil and then return it. The truck is 18½ by 18 feet.

**Contaminated oil** is pumped from the source through a 600-gph. filter press to remove a considerable portion of the entrained water. The press also acts as a water-slug indicator or an indicator of the presence of excess sludge that would load the purifiers if allowed to pass on. From the filter, the oil is pumped into the purifier units where acid, soluble sludge and other products of oxidation are removed by adsorption employing the company's Cranite fullers earth. From here the oil flows to an electric heater and then it is sprayed into the vacuum in the dehydrator. The reconditioned oil is returned to its original source in a closed circuit.

BREVITY—Identify by IEN - 9898 if you write the maker

BUILDINGS . . Movable partition employs honeycomb panel, as specified

Source: E. F. HAUSERMAN CO.
6802 Grand Ave., Dept. IEN, Cleveland 5, Ohio



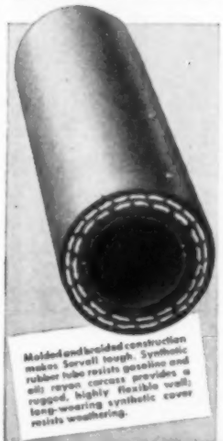
**Korweld** trade names a laminated-panel construction consisting of non-metallic composition board on the two sides of a honeycomb made of impregnated paper in which the facing panel and the paper are plastic welded into a single unit. Steel is used for post, base, cornice, lay-in wiring facilities and accessories. Panel size and partition layout are individually engineered for each installation.

**The panel** measures 3 in. in thickness and will withstand a pushing pressure of 70 lb. per sq. inch. It will stand up under an overall pulling pressure of 500 pounds. Panel edges are covered with metal to prevent chipping or cracking. Finish is in two coats of baked enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 9899 if you write the maker

Simplify Your Hose Buying with Hewitt-Robins Servall®




If your plant has many intermittent, light-duty uses for hose, Hewitt-Robins new Servall all-service hose is the efficient, economical answer!

**SPECIFICALLY,** Servall is recommended for: All types of small air tools; for air cleaning and general air service; hot or cold water service within recommended working pressures; low-pressure spraying and fire-fighting; intermittent gasoline and oil service where the hose is not continuously filled; weak inorganic acids and alkalies and water contaminants; grease, paint (not lacquer) and insecticide spraying.

**HERE IS MANY-HOSES-IN-ONE;** dependable wherever and whenever a special heavy-duty hose is not required. Buy Servall. Buy it by the reel, use it as you need it. Think of the money you save!

**BULLETIN 137** gives complete data. Call your Hewitt Rubber distributor (see "Rubber Products" in classified 'phone book) or write Hewitt Rubber Division, 240 Kensington Ave., Buffalo 8, N. Y.

HEWITT-ROBINS
SERVALL HOSE

BREVITY—Identify by IEN - 9900 if you write the maker

Better Cartons at LESS Cost

If you are now buying factory-processed cartons, or are erecting set-up cartons with hand labor, the Palmer Carton Former can give you startling economies. In many plants, the savings on carton materials alone pays for the machine in a matter of months! Using inexpensive die-cut blanks, this machine produces well-shaped cartons at speeds up to 102 cartons per minute. Requires no operator — merely has to be kept supplied with blanks.

Write for literature

PALMER
Continuous Motion
CARTON FORMER

• CARTON DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS

BREVITY—Identify by IEN - 9901 if you write the maker

RESISTS
VIOLENT
TEMPERATURE
CHANGES

This resistor survives temperature fluctuations over the widest range—even from 340 to -55°C, repeatedly.

In Ward Leonard Vitrohm resistors, all components have *matched* thermal characteristics.

This is because the vitreous enamel coating and ceramic cores are formulated and *made* by Ward Leonard . . . wire drawn to Ward Leonard's specifications. They react uniformly to temperature changes.

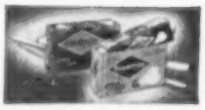
Write for Vitrohm Resistor Catalog, Ward Leonard Electric Co., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

BREVITY—Identify by IEN - 9902 if you write the maker

A BETTER TOOL

- FOR BETTER SEEING
- FOR BETTER WORK
- FOR BETTER COMFORT
- FOR BETTER ECONOMY



Champion MEANS THE BEST IN LAMPS!

CHAMPION LAMP WORKS
Lynn, Massachusetts

BREVITY—Identify by IEN - 9903 if you write the maker

# Cut Sheet Metal Faster - Cleaner

with Stanley U218 Unishears

Far superior to hand snips, U218 Unishears cut 18 gauge sheet steel at 15 feet per minute. What's more, they leave a smooth, finished edge—save you filing, de-burring, and trimming. Self-feeding principle advances work through blades—requires little operator effort. U218 cuts either straight or curved lines. Available for operation on any standard voltage, A.C. or D.C. Ask your supplier to show you the U218. Or write Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

STANLEY
Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 9904 if you write the maker

## Chicago RIVET "912"
AUTOMATIC RIVET SETTER
CUTS COSTS 3 WAYS

**1 FASTENS FASTER . . .** Only the speed of the operator limits the 912's riveting speed. Completely automatic. A push on the foot pedal automatically feeds, inserts and clinches the rivet.

**2 DOES WORK OF SEVERAL MACHINES** Quick change rotary hopper and raceway makes the 912 adjustable in 5 to 10 minutes to set different size rivets. Adjustable anvil height and 12-inch throat provide further versatility.

**3 SAVES ON MAINTENANCE . . .** The 912 is massively built to stand the shocks of constant use and is designed for quick, easy servicing and parts replacement.

If your assembly calls for 3/16" steel tubular rivets or smaller, of ¾" lengths or less, ask us to show you how the 912 can cut your fastening costs. Send a sample of your problem assembly (or blueprint) for a free fastening analysis.

**FREE CATALOG** contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

BREVITY—Identify by IEN - 9905 if you write the maker

# Send Coupon Today for Your FREE Copy

"WHY IT PAYS TO ANCHOR YOUR MACHINES WITH UNISORB®"

Here's the book that tells you how to

- Avoid destructive floor-drilling with UNISORB machine anchoring . . . the modern way that needs no bolts, no lag screws.
- Eliminate 60%-85% transmitted machine noise and vibration.
- Achieve a safe, dependable machine mounting that lasts for years and years *with no maintenance.*
- Save time, expense and confusion when installing new machinery or repositioning present machinery.

**The FELTERS Co.**
210-5 SOUTH ST.
BOSTON 11, MASS.

Gentlemen:
Please send my free copy of "Why It Pays to Anchor Your Machines with UNISORB."

NAME .....
COMPANY ..... TITLE .....
STREET .....
CITY & STATE .....

BREVITY—Identify by IEN - 9906 if you write the maker

## HAMMER . . Copper alloy head presents spring backed striking faces

Source: CHARLES BUDD CORP.
P. O. Box 375, New Rochelle, N. Y.

**Spring-Flo** Custanite trade names a new soft-head hammer made with a cast head of copper alloyed with tin and silicon. The head is cored out to present square shouldered recesses on the two sides of the handle. C-shaped springs made of strip steel are inserted through the handle opening so their flanges ride on the shoulders and their heads lie back of the striking faces top and bottom.

**Application** of the hammer results in compression of the copper against spring action in line with the blow. There is no tendency to mushroom outward. The head is mounted on a wood handle and is pinned so it cannot come loose.

**Six sizes** in the line range from ¾ to 6 pounds. The smallest ¾-lb. unit measures 2½ in. in overall length of the head, 1⅛ in. in square cross section at the handle tapering to ¾ in. square at the ends.

BREVITY—Identify by IEN - 9907 if you write the maker

## SEALING . . Teflon-metal units in fused assembly to hold a vacuum

Source: UNITED STATES GASKET CO.
658 N. 10th St., Camden 1, N. J.

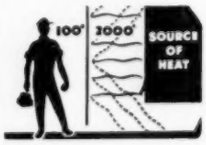
**Chemelec seal is the trade name**

**Electric terminals** for air-tight assembly into vacuum chambers are now available in specified shapes, designs and sizes in which Teflon is fused to metal. The company also can supply metal-faced Teflon sheets, rods and cylinders for given uses. The seal between the Teflon and the metal will withstand vibration, shock, high and low ambient temperatures as well as thermal shock.

BREVITY—Identify by IEN - 9908 if you write the maker

## INSULATING . . Reflecting fabric serves as curtain, shield, baffle

Source: SAFETY FIRST SUPPLY CO.
423-27 Magee St., Pittsburgh 19, Pa.




**Radiant heat,** at temperatures to 2,000 deg. F., is reflected back by the mirror-like surface of this new Ray-Foil protective fabric. A worker on the opposite side would be exposed to temperatures not over 100 deg. F. according to tests the company has made. It is available in rolls measuring 3 ft. in width by 100 yds. in length. It also can be supplied in cut lengths and in tape measuring 2 in. in width by 72 yds. in length. A complete shield measures 48 by 72 inches. The shield can be covered on one or both sides with a fire-resistant wire shield designed to protect against arc flash and sparks.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9909 if you write the maker

## Bulletin 609 Manual Starters

- Silver alloy contacts need no maintenance
- Generous wiring space in white interior

An Allen-Bradley Bulletin 609 across-the-line starter saves maintenance time on any machine. Contacts never need cleaning, filing, or dressing—they're always ready for action. Strongly built for years and years of trouble-free operation. Thermal breakers provide reliable motor overload protection. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 9910 if you write the maker

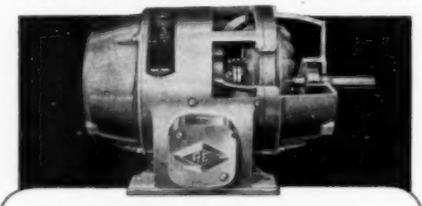
## WALDRON Improved Gear Type

USED BY AMERICA'S LEADING MACHINE BUILDERS

Users recognize the WALDRON Coupling as the most advanced design of the Gear Type. Compare it with ordinary types from a standpoint of shaft size, horsepower, speed and service. For design and construction details, ratings, service factors, etc.—write for descriptive catalog.

JOHN WALDRON CORP.
Main Office and Works
New Brunswick, New Jersey
COUPLINGS

BREVITY—Identify by IEN - 9911 if you write the maker



## NEW FLUID-SHAFT MOTOR GIVES SMOOTH LOAD ACCELERATION . . . ELIMINATES NEED FOR CLUTCHES!

Reuland Fluid-Shaft motor with double reduction gear reducer.

*Write for new Engineering Folder No. 1000.*

REULAND FLUID-SHAFT ELECTRIC MOTORS are the only units with an *integral fluid coupling.* Their cost is much less than a conventional motor with drive attachment, and their ability to "take it" has already been proved on heavy jobs, including mixers, centrifugals and cranes.

Fluid-Shaft motors accelerate heavy loads smoothly without the aid of mechanical clutches. Overloads are eliminated. *Will start heavier loads than regular motors of comparable horsepower!*

- Protection against "jamming"
- Reduces maintenance
- No need to overmotor to start heavy loads
- Wide H.P. range
- Uses less starting current
- Shorter mounting dimensions

RE REULAND ELECTRIC CO.
ALHAMBRA, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 9912 if you write the maker

**TOOLAGRAM**

Master Puller Set 4000AB makes hundreds of puller set-ups because PROTO puller parts are interchangeable.

That Power Suckorse pose is a reminder to remember that PROTO signifies highest professional standards. PROTO tools are light but strong, balanced, easy handling, snug fitting, long-lived. Buy them—while still obtainable. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271J Santa Fe Ave.,
Los Angeles 54, Calif.

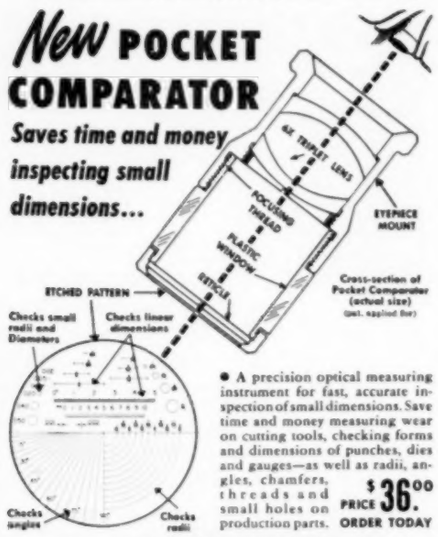
5184

PROTO TOOLS
LOS ANGELES

BREVITY—Identify by IEN - 9913 If you write the maker

# New POCKET COMPARATOR

**Saves time and money inspecting small dimensions...**




Cross-section of Pocket Comparator (actual size) (pat. applied for)

● A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of BELL & HOWELL CO. distributed by

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

**NATIONAL TOOL CO.**

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 9914 If you write the maker

# NEW a low-cost whiteprinter

## BRUNING'S COPYFLEX "20"

Here's the new Bruning Model 20 Copyflex. Because of its low price, thousands of companies now can make their own whiteprints and thus realize a substantial saving. Now you can produce your whiteprints *when* you want them, as you want them.

It will pay for itself by producing sharp, clean prints of your engineering drawings as well as copying your production orders, reports, specifications, defense order copies, etc.

The Model 20 is a completely new, medium volume machine of advanced design, yet sells for the lowest price of any machine in its class. It has a full 46" printing width, and takes cut sheets or roll stock.

### Compare these advantages

- **LOWEST PRICED** machine of its class available.
- **NO FUMES.** Bruning Copyflex machines use no vapor developer therefore cannot emit unpleasant fumes.
- **NO INSTALLATION.** No exhausts needed. Just connect to an ordinary 115 volt AC electric power circuit.
- **EASY OPERATION.** No training needed – anyone can operate a Copyflex.

See how the Model 20 Copyflex (or one of our five other models) can help you. Write today for free descriptive literature.

**BRUNING**

*Specialists in copying since 1897*

CHARLES BRUNING COMPANY, INC.

Dept. H-101 100 Reade St. New York 13, N. Y.

BREVITY—Identify by IEN - 9916 If you write the maker

## FOLDING . . Motor driven machine for paper sheets to 9 by 14 inches

Source: A. B. DICK CO.
5702 W. Touhy Ave., Chicago 31, Ill.

**Paper sheets** to be folded are fanned and placed with the top sheet forward on the feed table of this new No. 56 folding machine. A feed roller in the machine separates one sheet at a time and moves it to forwarding rollers and from there into the lower fold plate or chute. Distance that the sheet travels into the fold plate is determined by position of an adjustable stop. When the leading edge of the paper contacts the stop a buckle is created at that portion of the sheet that has not entered. The buckle is taken up between the first set of fold rollers and the fold is created.

**The same operation** is continued into an upper fold plate, if a second fold is to be made, this time using a second set of fold rollers. The sheet passes through these rollers to removable stacking tapes which carry it to the receiving tray for removal. When only a single fold is desired the upper fold plate is turned end for end so a deflector located opposite to the open end of the plate prevents the paper from entering.

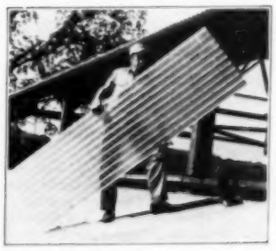
**Speed** is to 150 sheets per minute based on 8½ by 11-in. size. Overall dimensions are 36¾ by 18 by 17½ inches. Weight is about 80 pounds. Drive is by a ½-hp. universal motor. Shafts ride on Oilite bearings.

**A fold chart** on the receiving tray illustrates the six standard folds that can be made together with settings at which the fold plates are positioned. It is possible with the aid of this chart to set the machine without actually having to measure the folds for either letter-size or legal-size paper for single folding, parallel letter folding, double parallel letter folding, accordion or statement folding, French folding and horizontal folding with two vertical folds. Paper-stock range is from 16 to 36 substance. Sizes range from 2½ to 9 in. in width by 3½ to 14 in. in length.

BREVITY—Identify by IEN - 9917 If you write the maker

## BUILDING . . Translucent sheet for windows, skylights, partitions

Source: RESOLITE CORP.
Route 19, Zelienople, Pa.

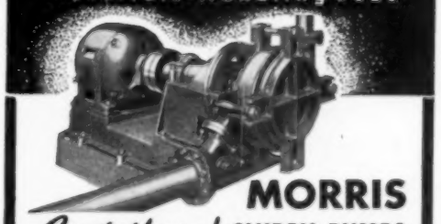


**Corrugated** and flat sheets to 12 ft. in length and conforming in width and corrugations to standard roofing, siding and decorative sheets, are available in a new translucent panel made of polyester resins reinforced with Fiberglas. The panels apply in windows, skylights, partitions. They are inert in contact with moisture, mild acids, alkaline fumes. They are shatterproof, have high structural strength and can be worked with ordinary tools. Colors are blue, green, ivory, red, yellow, in the line at present.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 9918 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs



**MORRIS Centrifugal SLURRY PUMPS**

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

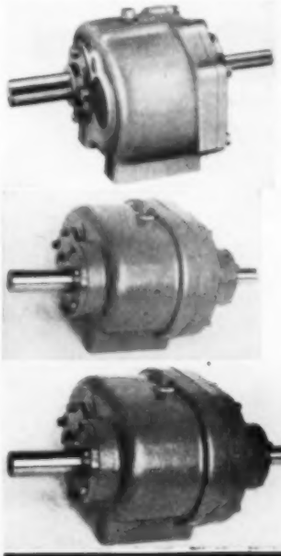
**Lower Cost Per Ton or Million Gallons**

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
*Branch Offices in Principal Cities*

MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 9919 If you write the maker



## 2 speed automatic transmission

12000 (1-5 H.P.)
5 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

14100 (5-20 H.P.)
20 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

15000 (20-50 H. P.)
50 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

Send for catalog and complete information.

up to 50 h. p.

For Machining Lathes, Milling Machines, Shapers, Turret Lathes, Drills, Broaches, Bar Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

**WESTERN TRANSMISSIONS**

WESTERN MANUFACTURING CO. 400 HURTER . . DETROIT, MICHIGAN

BREVITY—Identify by IEN - 9920 If you write the maker

# THE BIG 89% TELLS YOU WHY A YALE ELECTRIC TRUCK IS YOUR BEST BUY

**89% of the Yale Electric Trucks sold today are bought by previous users . . . so satisfied with Yale performance and Yale economy that Yale is their choice again.**

• Seeing that extraordinary record — you'll say these must be extraordinary trucks. And they are!

They bring to your materials handling problems new shortcuts — new savings in man-hours — new opportunities to answer today's stepped up demands for increased production and faster deliveries.

Rugged Yale quality — built into every part — explains the service these trucks give even in the toughest jobs . . . even when working on round-the-clock schedules that would knock out trucks of less durable construction.

Ask for complete details about Yale Electric Trucks — and their industry-wide record of satisfied users.

YALE is a registered trade mark of the Yale & Towne Manufacturing Co.

SEND THIS COUPON TODAY

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Roosevelt Boulevard & Haldeman Ave., Philadelphia 15, Pa.

*I am interested in cutting my materials handling costs.*

☐ Please have your local representative call on me.
☐ Please send me free detailed literature.

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Company _____
Street _____ City _____ State _____
In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ontario

**YALE & TOWNE**

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

TALK GAS AND ELECTRIC INDUSTRIAL TRUCKS • YALE WORKSAVERS
YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS

▼ BREVITY—Identify by IEN - 9922 if you write the maker ▼

# Rolling Steel Doors

*Manually • Mechanically • Power Operated*

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

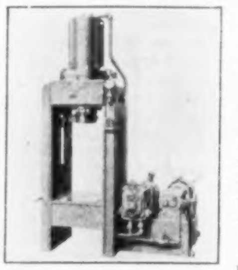
THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

▼ BREVITY—Identify by IEN - 9925 if you write the maker ▼

## PRESS . . Hydraulic extruding machine rates 75 ton and provides 18 in. stroke

Source: OILGEAR CO.
1567-A W. Pierce St., Milwaukee 4, Wis.



**Special 75** is new assembly of press with one of the company's feed pumps and a variable-delivery pump, mounted together on a single oil reservoir. Each pump is provided with its own drive motor. Operation is initiated at a "start" lever and linkage for rapid approach, automatic change over to extrude, automatic change to rapid return to top position. Any function can be selected manually.

**Traverse** in downward direction is at 22 ipm. with the feed pump only, 22 to 33 ipm. with both pumps. Traverse upward is at 46 ipm. Extruding speed is at 1 to 2.2 ipm. with the feed pump only and 2.2 to 12 ipm. with both pumps. Maximum distance, ram to table, is 36 inches. Table dimensions are 24 by 24 inches. Assembly weight is about 7,480 pounds.

▼ BREVITY—Identify by IEN - 9926 if you write the maker ▼

## PROTECTING . . Welding helmet lens sharpens outline, minimizes eye strain

Source: STEINWACH'S SAFETY SUPPLY
367-71 Ellicott St., Buffalo 3, N. Y.

**Rectangular sample upon request**

**Silver-Glo** trade names new welding lens made of silver-coated cellulose acetate 0.008 in. in thickness. When observed from a distance the lens appears as a mirror. It acts as a blue tinted filter when it is held between the eyes and a light source to sharpen the outline of the object being observed, to minimize eye strain and to reflect heat given off by the work. The lens measures 2 in. in height by 4⅛ or 4¼ in. in width. It applies in a helmet back of the clear cover lens and in front of the dark filtering lens.

**List price** is 15 cents. Packaging is one to an envelope, 24 to a standard carton. In addition to the rectangular unit, the lens is available in a 50-mm. diameter for use in goggles. For this purpose it lists at 20 cents per pair. Packaging is one pair to an envelope, 24 pair to a standard carton.

▼ BREVITY—Identify by IEN - 9927 if you write the maker ▼

## CHUCK . . Collet design for broken or short shank drills

Source: RITMAR CO.
181-5 New York Ave., Huntington, N. Y.

**New chuck** employs a locking adapter with female threads at one end to take a drill holder and a male threaded shank for application in a driving spindle. Three shank sizes are 10-32, ¼ in. 28, 5/16 in. 24 threads. The chuck makes it unnecessary to braze shanks on broken drills and applies short drills in many machine operations. Drill size range is No. 50 to No. 6.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

▼ BREVITY—Identify by IEN - 9929 if you write the maker ▼

Picture of a Free Man! thanks to CESCO's New #600 AIR-FED HOOD

Cesco's New #600 AIR-FED HOOD . . . *Approved by* U. S. BUREAU OF MINES *under "Class C" Respirator for use where toxic dust and fumes are encountered. Operating pressure 5 to 9 pounds.*

**FREE** *from weighty, rigid hoods*
**FREE** *from hoods with narrow, fixed vision!*
**FREE** *from toxic dusts!*
**FREE** *from harmful abrasive particles!*
**FREE** *from fatiguing, noisy air inlets!*
**FREE** *to work better, faster, more safely!*

• The exclusive advantages of CESCO's new #600 AIR-FED HOOD are bound to increase worker comfort, safety, and output. It is ideal for lead discing and other grinding operations, light sandblasting, paint spraying, etc. Write for more detailed information or see your Cesco Distributor.

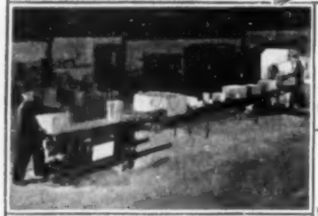
CHICAGO EYE SHIELD CO., 2326 Warren Blvd., Chicago 12, Illinois

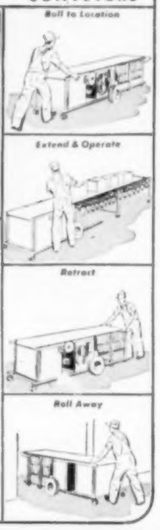
CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Salt Lake City, Spokane, St. Louis, St. Paul, Toledo, Tulsa

▼ BREVITY—Identify by IEN - 9923 if you write the maker ▼

MODERN TIME AND COST SAVERS BUILT BY... *Standard* GRAVITY & POWER CONVEYORS






SAVE TIME LOADING — UNLOADING WITH THE

E-X-T-E-N-D-O-V-E-Y-O-R

This compact, mobile, easily maneuverable power-belt conveyor unit extends to 46 ft. in either direction and retracts to 9 ft. 10 in. Reaches into cars, trucks, trailers. Handles boxes, bags, bundles, cartons, crates, cases weighing up to 150 lbs. Available in two models — 1 way stretch and 2 way stretch — and 4 sizes. Write for Extendoveyor Bulletin—address Dept. IEN-101

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
*Sales and Service in Principal Cities*

▼ BREVITY—Identify by IEN - 9930 if you write the maker ▼

"Ro-Fin" Tubes

For Efficient heat transfer

Nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING are in production . . . straight lengths . . . coils . . . U-bends . . . with or without threaded end connection, or for standard flare connections! Nearly all nationally known manufacturers specify "Ro-Fin"!

For Refrigeration Condensers • Steam Condensers
Fluid Recovery Condensers • Fan-Type Unit Heaters
Concealed Radiation Convectors • Diesel Engine Cooling

**Write for Information on All Heat Transfer Problems!**

ROME TURNEY RADIATOR COMPANY

200 East Front Street Rome, New York

▼ BREVITY—Identify by IEN - 9924 if you write the maker ▼

NOW an easy way to identify stainless steel "Specs"

Here's a timesaver you will find invaluable . . .

Containing much salient data on "specs," this new Frasse chart will prove a boon when you're working with stainless steels. With it a specified steel can easily be identified in less than 30 seconds—saving valuable time normally spent thumbing through individual specifications.

Compiled by Frasse Technical Service, the chart shows chemical analysis requirements for each of 37 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (bars, wire, etc.) and nearest corresponding SAE, AISI and AMS type numbers.

Printed on durable cardboard stock, the chart is regular file card size—can be tacked on wall, filed in desk drawer, or slipped under glass for ready reference.

It's furnished without charge, of course—so make your job an easier one! Send the IENquiry for this helpful chart today—and remember that Frasse Technical Field Service is always available to assist you with applications involving stainless steels.

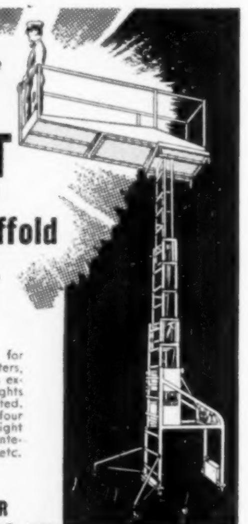
Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Lyndhurst • Philadelphia • Buffalo • Syracuse

Call FRASSE 1st for Stainless Steels
Bars • Sheets • Strip
Plates • Angles • Wire
Tubing • Pipe • Fittings

▼ BREVITY—Identify by IEN - 9928 if you write the maker ▼

Gets At Those Inaccessible Places

HI-LIFT OVEREACH Extension Scaffold



• Extends to any height
• No erection required
• No loose parts

Here's a unit especially designed for reaching high places over counters, machinery, storage bins, etc. Models extend from 6 ft. 8 in. to various heights up to 26 ft. Hand or electrically operated. Roller bearing swivel casters on all four legs assure easy maneuvering in tight places. Ideal for all overhead maintenance—painting, lighting, cleaning, etc.

*Also makers of*

HI-LIFT MARQUEE SERVICER
HI-LIFT EXTENSION SCAFFOLD
ATLAS ONE-MAN TRUCK LOADER
*Write for Full Information*

ATLAS INDUSTRIAL CORP.
847 39th Street
Brooklyn 32, N. Y.

▼ BREVITY—Identify by IEN - 9931 if you write the maker ▼

SAVE UP TO 85% ON TOOLS-MACHINERY AND PARTS!! NEW! 200 PAGE CATALOG

WAR SURPLUS SAVINGS

STATIONARY or PORTABLE D.C. ARC WELDER

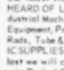
For light or heavy industrial work. Delivers 300 Amps., continuous — or 350 to 400 Amps., intermittent. Designed to weld continuously for hours. . . This unit is built around a rugged, heavy duty, aircraft type generator and comes complete with Pulley reactor, output controls, Hi-Lo switches & rheostat mounted on sturdy steel frame. Operates on 15 H.P. for maximum output. Gas or electric motor. 97.50

JUST OFF THE PRESSES! IMMEDIATE DELIVERY! ORDER NOW!!

Our latest and biggest CATALOG of NEW and SURPLUS BARGAINS. Thousands of items at UNHEARD OF LOW PRICES! SAVINGS UP TO 85% in Hand & Power Tools, Electrical Supplies, Industrial Machinery, Gas and Electric Motors, Winches, Hoists, Machine Tools, Gauges, Welding Equipment, Pneumatic & Air Tools, Raw Stocks, Aluminum, Brass, Copper, & Steel in Sheets, Bar, Rods, Tube & Extrusions. Nuts, Bolts, Rivets, Screws, Wire, Cable and a Huge Stock of HYDRAULIC SUPPLIES including Cylinders, Valves, Pumps, Motors, Fittings, Tubing, etc. While these items last we will continue to sell them at typical low Palley Prices. Write for your copy of this Bargain Packed Catalog TODAY!

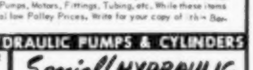
PALLEY SPECIALS on HYDRAULIC PUMPS & CYLINDERS

HYDRAULIC PUMP or MOTOR GEROTER TYPE



Logan Geroter type. For operating hydraulic systems on trucks, tractors, etc. Delivers 8 GPM at 1200 RPM at 1000 PSI with 5 HP. Can also be used as Hydraulic fluid motor. 3/8" stand pipe ports. ½" splined shaft for pulley or direct attachment. 5½" dia., 7" long. Used but condition guaranteed. 19.50

Special! HYDRAULIC CYLINDER



Gives 20,000 lbs. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lbs. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for road — farm — shop machinery. 29.95

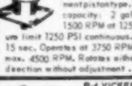
P-3 STRATO POWER PUMP

With built-in variable flow control valve in head. Positive displacement piston type. Displacement capacity: 2 gal. per min. at 1500 RPM at 1250 PSI. Pressure limit 1250 PSI continuous. 1400 PSI for 15 sec. Operates at 3750 RPM, intermittent max. 4500 RPM. Rotates either direction without adjustment . . 19.50

No. 3 HYDRAULIC CYLINDER

Double action. Bore is 1" — Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75

P-4 VICKERS ANGLE PUMP



Positive displacement type, angle piston. Displaces .507 cu. in. per revolution. Has capacity of 6 gal. per min. at 3000 RPM at 1500 PSI, continuous, 1875 for 15 sec. Operating speed of 3750 RPM, intermittent maximum, 4500 RPM. Rotates to the right only 19.49

4 WAY VALVE

Poppet type. Pressure balanced. Off at neutral position. Piston type with built-in relief valves for limit of cylinder strokes. 5/8" AN tube size (7/8"-14 thread) inlet & outlet. Ports to cylinder are 1/2" AN tube size (3/4"-16 thread). 9.75

PALLEY SUPPLY CO.
DEPT. IN10 6321 SAN FERNANDO RD. GLENDALE 1, CALIF.

Order from this ad. All sales final. All prices F.O.B., Glendale. Pay by M.O. or check. P.O.'s accepted from D.&B. firms. ½ deposit with C.O.D.'s.

BREVITY—Identify by IEN-9932 if you write the maker

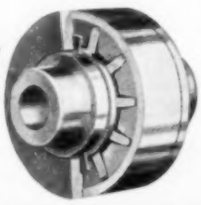
# KUSHION-TORK
## WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.
Send for Bulletin No. 28-N.

**Kanti-Lever Couplings**

**4,000,000 h. p. in Use**

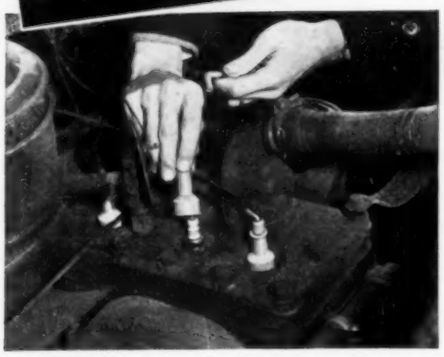
MFRS. OF SECTIONAL STOCK RACKS



**BROWN ENGINEERING CO.**
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN-9933 if you write the maker

**Better rubber products are made with Du Pont NEOPRENE**



## Cover of neoprene shields spark plugs . . . resists heat, ozone and gasoline vapors

Cars start more quickly in any weather when spark plugs are protected with this cover of Du Pont neoprene. It was designed to keep the plug from getting wet, and it had to meet a set of tough specifications. But neoprene, with its combination of unusual properties more than qualifies for the job. Neoprene is ozone resistant . . . won't crack or harden from the effects of corona discharge. And it doesn't become soft and gummy from the heat of a running motor. What's more, neoprene resists the oils, greases and gasoline vapors found under the hood of every automobile. Under all these adverse conditions, durable neoprene keeps its shape and resilience . . . forms a durable, moisture tight cover that provides long lasting protection.

Here again, neoprene proves itself an ideal material for a tough application. Thousands of resilient parts and products used in industry today owe their toughness, strength and long life to neoprene's outstanding characteristics. While Du Pont makes no finished products of neoprene, your rubber goods manufacturer or distributor will be happy to tell you about the neoprene products he supplies.

**FREE! THE NEOPRENE NOTEBOOK**

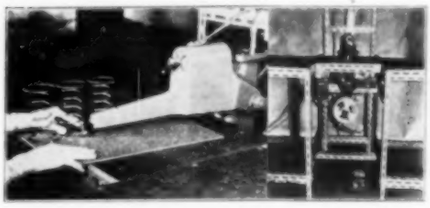
Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-10, Wilmington 98, Delaware.

**NEOPRENE**
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN-9935 if you write the maker

## STAPLING . . Inverted machine secures seat springs on Masonite panel

Source: ACME STEEL CO.
2854 Archer Ave., Chicago 8, Ill.



**Seat springs** can be positioned on top of the Masonite panel to which they are to be stapled in manufacture of automotive seats by this new inverted design of the company's stapling machine. With the clinching arm above rather than under the work, the springs can be located visually in connection with printed circles on the panel. Each spring is fastened to the panel by two staples. The staple legs are forced through the material, wrapped around the spring and returned to touch.

**Supporting members** for the work table are located on both sides of the supporting steel stand. The table measures 10 by 2½ ft. and is topped with Masonite. The center section of the table top is removable for access to the machine in order to oil and adjust it. Provision for oiling the various bearings is reversed so correct lubrication is assured in the inverted position. Operating speed permits placing and stapling 48 springs to a panel in from three to five minutes.

BREVITY—Identify by IEN-9936 if you write the maker

## CASTERS . . Heavy duty units in standard and special assemblies

Source: ALBION INDUSTRIES INC.
802 Plastic Road, Albion, Mich.

**Series 81,** to the left in the illustration, is a new line of casters with 5, 6, 8 and 10-in. wheels. It is available in swivel and rigid assemblies. Semi-steel, Texite, or Moldon can be specified in the wheel for load capacities ranging from 450 to 2,000 pounds. The top plate measures 5½ by 6½ inches. The wheel is mounted on 1-in. Hyatt roller bearings.

**Series VG,** in the center, is designed to ride on an angle-iron rail. It is available in five wheel sizes between 4 and 10 in. of which the 4, 8, and 10-in. units are new. The wheel in this caster is semi-steel. Load capacity is 600 to 2,500 pounds. Top plate dimensions are 3¾ by 4⅜ in. to 5¼ by 7¼ inches.

**The special caster** shown to the right is one of the larger units made by the company. It weighs about 150 lb., has load capacity of 2,240 pounds. It mounts a 16 by 5-in. Moldon rubber wheel. This caster is typical of new units the company is prepared to manufacture for specified purposes.

**Catalog 52,** 20 pages, illustrates, describes and provides specifications for the company's complete caster line.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN-9937 if you write the maker

## A Lot More for Your Glove $

in this New Extra-Duty Safety Line of **PIONEER STANZOIL** RED NEOPRENE

## Coated Canvas Gloves

**Exclusive Pioneer Non-Slip Grip** Holds wet things as if dry.

**Curved Fingers** Extra comfort and efficiency.

**Preflex-Palm Design** Prevents wear from bunching.

**Inserted Thumb Design** No inside seam to wear through quickly.

**Heavy Red Neoprene Coating** Liquid-resistant, durable.

**Entire Glove is full weight 8 oz. canton flannel** Comfort, long wear.

Compare these new safety red neoprene coated canvas gloves with any others anywhere and you see the extra hand protection, extra wear, extra durability in oils and acids, extra work and efficiency only STANZOILS give you. For less cost-per-hour, more work-per-day, write for full information about these Extra-Duty STANZOIL neoprene coated canvas gloves, today. *The Pioneer Rubber Company, 635 Tiffin Road, Willard, Ohio.*

STANZOIL

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN-9938 if you write the maker

**SELF-CONTAINED MECHANISM** for making or breaking a circuit—in small space—with short movement and light pressure. For descriptive BULLETIN 204, write Square D Company, Industrial Controller Division, 4041 N. Richards Street, Milwaukee 12, Wisconsin.

*Ask Your Electrical Wholesaler for Square D Products*

**SQUARE D COMPANY**
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN-9939 if you write the maker

## The Answer is often:

# USE SHAF-TITE* ROLLS

**Many Patented Constructions**

*Choice of*

## METAL, RUBBER, or WOOD ROLLS

**Send For NEW ROLL CATALOG No. 48**

INDUSTRIAL ROLL DIVISION

**RODNEY HUNT MACHINE CO.**
873 Main Street — RODNEY HUNT — Orange, Mass., U.S.A.
*Reg. U.S. Pat. Off.

BREVITY—Identify by IEN-9940 if you write the maker

## OKOLITE-OKOPRENE* Cables bring circuit security to Falls City Brewery Company

Surrounded by steam mains (1), moisture – even occasional floods (2), Okolite-Okoprene cables (3) carry power to brewhouse and bottle shop through this utility tunnel.

Heat, moisture and refrigeration along the feeder circuits constantly threatened the power supply at the Falls City Brewery Co. A utility tunnel, carrying steam, gas, water and the main power lead was the principal problem.

Okolite-Okoprene cable — with its electrically stable insulation and longer-lived sheath—was used to combat this problem. Okolite-Okoprene resists moisture, ozone, sunlight, oils, acids, chemicals, heat and cold. This simple cable has no braids to rot, requires no lead sheath to complicate installation.

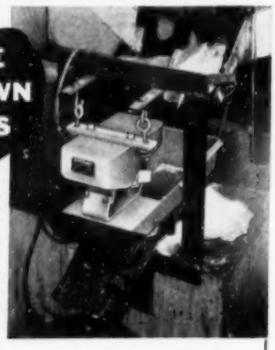
More and more industrial plants are specifying Okolite-Okoprene cables for long-term dependability. For more information on why, write today for new Bulletin *IE-1051.* The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

**OKONITE** insulated wires and cables

BREVITY—Identify by IEN - 9941 if you write the maker


**REDUCE SHUT-DOWN PERIODS**



Installation of this Syntron SF-01 Screening Feeder reduced shutdown period at the end of each shift allowed for each centerless grinder operator to clean coolant tank. Equipped with a 6"x15", ¼mm. screen, the Feeder removes over 90% of the sludge from the grinding coolant. This sludge, consisting of steel filings and abrasive grains, is fed into a receptacle beside the cooling tank. Continuous, automatic sludge removal not only eliminated costly shutdown periods, but also provided cleaner coolant liquid throughout the shift.

*SYNTRON*

"Vibra-Flow"

**SCREENING FEEDERS**

For the efficient removal of sludge from coolant liquids used on centerless grinders, automatic screw machines or any type machine requiring a coolant.

Write to

**SYNTRON CO.**
410 Lexington Ave. Homer City, Pa.


BREVITY—Identify by IEN - 9942 if you write the maker


SEE OUR CATALOG IN SWEET'S FILE — Product Engineering

Have you seen Gast Application Ideas booklet, showing 26 product problems and solutions? Sent on request.

**WHAT NEXT?**
**GAST rotary AIR MOTORS**
**run on gas pressure to drive liquid pumps!**

Alert designers are still finding new ways to exploit the unique advantages of Gast Air Motors. For example:

**PROBLEM:** Find explosion-proof drive for McCord Chemical Pump, used in oil fields. Electricity often not available.

**SOLUTION:** Gast Air Motor, driven by pressure of natural gas from field, turns 250 r.p.m. to drive liquid pump through worm gear.

**RESULT:** Dependable, "free" power; low motor cost.

What next? Perhaps *you'll* find a job that can be done *better* with Gast rotary-vane Air Motors. Remember these unique characteristics: They're compact, explosion-proof, widely variable in speed. Overloads can't burn them out! Sizes from 1/20 to 3 H.P., some reversible. Write Gast, "Air may be your Answer!"

*Original Equipment Manufacturers for Over 25 Years*

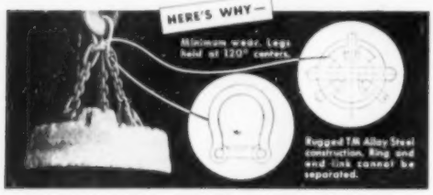
GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 110 Nickley St., Benton Harbor, Mich.


BREVITY—Identify by IEN - 9943 if you write the maker


TM *Alloy Steel Downtown*

Frictionless
**MAGNET CHAINS**

**DO MORE WORK, LAST LONGER, COST LESS than conventional types!**




On-the-job tests prove TM Alloy Steel Downtown Magnet Chains superior to any other three-leg assemblies on the market. Patented design of end link and horizontal ring with special locating plate keep chain legs at 120° centers. This prevents ganging-up, excessive friction and twisting . . . assures level lifts. Long life, safety and economy is assured by TM Alloy Steel Construction. Great strength, high resistance to abrasion, grain growth and shock at sub-zero temperatures are only a few of the TM Alloy Steel qualities. Send coupon!

**S. G. TAYLOR CHAIN COMPANY, Hammond, Indiana**

S. G. TAYLOR CHAIN COMPANY
Dept. 4, Hammond, Indiana
Rush literature and prices on TM Alloy Steel Downtown Magnet Chains.
Name _____
Address _____

TAYLOR MADE — A GREAT NAME IN Chain — SINCE 1873


BREVITY—Identify by IEN - 9944 if you write the maker

## SEALING . . Lead base paste for application on threads and gaskets

**Source:** CHICAGO GASKET CO.
1273-77 W. North Ave., Chicago 22, Ill.

**Graycote** trade names a new non-setting sealing material based on microfine metallic lead and non-drying insoluble oil. The material is brushed on pipe threads or over the surfaces of a gasket. When the pipe is assembled or the gasketed joint is tightened the material will handle presures to 6,000 lb. and temperature to 500 deg. F. It remains pliable and permits dis-assembly at any later time. It is suited for lines and equipment handling oil, steam, water, gaseous fuel, refrigerants, gasoline distillates, liquid petroleum gases. It is approved by Underwriter's Laboratory Inc. for threaded pipe connections.

BREVITY—Identify by IEN - 9945 if you write the maker

## TESTING . . Portable ohmmeter reads to 100 megohms at 500 volts dc.

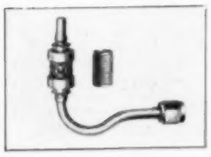
**Source:** ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.

**Model 264** is a new instrument in the company's Vibrotest line of battery-operated insulation-testing equipment. It features a low range between 0 and 10,000 ohms in addition to its overall 100-megohm scale to check insulation for leakage at values short of breakdown conditions. A reading is made by pressing a pushbutton. No cranking is required. Weight with the batteries is 18 pounds. Dimensions are about 8 by 6 by 7½ inches.

BREVITY—Identify by IEN - 9946 if you write the maker

## TUBE FITTING . . Flexible connector handles fuel oil in jet engine assembly

**Source:** CLIFFORD MFG. CO.
150-54 Grove St., Waltham 54, Mass.

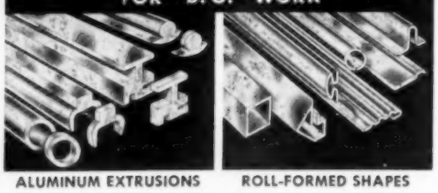


**Stainless steel** bellows is combined by welding to sections of fuel-oil tubing in this new flexible connector to handle fuel oil from manifold to the combustion units in a jet engine. The bellows is covered with a metallic braid for mechanical protection. Joints are welded by atomic hydrogen or inert arc. The assembly operates successfully at the high temperatures in the engine and provides flexibility to permit movement required by thermal expansion. Tube sizes are ¼ and ⅜ inch. Pressure rating is 1,000 pounds.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9947 if you write the maker


**PROMPT DELIVERY!**
**FOR "D. O." WORK**



ALUMINUM EXTRUSIONS — ROLL-FORMED SHAPES

Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

For an estimate, send drawing and specifications, plus data on quantity, finish, length, etc. Werner can perform the following secondary operations—bending, drilling, punching, cutting, counter sinking and welding. Finishes—as extruded, polished or anodized.

FREE bulletins describing manufacturing facilities and telling when to choose extruded or rolled shapes. Write: Dept. IEN.

**R. D. WERNER CO., Inc.**
295 FIFTH AVE., N. Y. 16, N. Y. • PHONE MU 6-2595
MANUFACTURERS OF ALUMINUM EXTRUSIONS AND ROLL-FORMED SHAPES


BREVITY—Identify by IEN - 9948 if you write the maker


*Nutting* FLOOR TRUCKS WHEELS-CASTERS

Here are two veterans of the Nutting line—proven resourceful and tough for faster material handling. These easy rolling, well balanced trucks get the job done right—on time! Your men will like to work with them—and their cost per year is hardly visible.

**Fig. 16—No. 24**
Steel-bound hardwood frame, extra heavy axle.

**Fig. 1136**
**Non-Tilting Bar Handle Truck**
Capacity 2500-3000 lbs. A proven veteran for all-round service. Pressure-lubricated roller bearing wheels. Range of sizes.

**Write for Bulletin 49-G**

Nutting makes everything in floor trucks, wheels, casters. Representatives in principal cities.

See your classified telephone directory or write direct to

our 60th year — NUTTING TRUCK AND CASTER COMPANY
2012 DIVISION STREET, FARIBAULT, MINNESOTA


BREVITY—Identify by IEN - 9949 if you write the maker


**Leading Manufacturer Reports...**

**SUBSTANTIAL SHIPPING SAVINGS—**

**with**

**STANLEY Steel Strapping**

Safe . . . quick . . . economical shipment of products of a prominent textile manufacturer was made possible with the Stanley Steel Strapping System. Packaging and shipping operations were speeded . . . man-hours cut to the bone. Lighter, less expensive containers were used, saving space and weight in transit.

The complete System includes tools, reels, seals, strapping and accessories—everything needed for *your* application. The Stanley Works, Steel Strapping Division, 204 Lake Street, New Britain, Connecticut. Offices in principal cities.

**Improved ACE Strapping Tool**

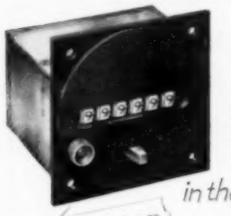
Fast, rugged and easy to operate. Positive spring feed magazine holds 100 seals. Operates in any position. Three sizes—for ½", ⅝" and ¾" strapping.

**STEEL STRAPPING and CAR BANDING SYSTEMS**

**STANLEY**
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 9951 if you write the maker



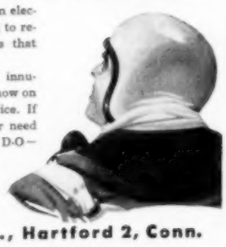
...and heres a Counter that talks to Jet-Testers in their own language...

Added Evidence that...

## Everyone Can Count on VEEDER-ROOT

This technician is reading an electrically operated counter, used to record data in test instruments that check aircraft performance.

And this counter is one of innumerable Veeder-Root specials now on duty in every arm of the service. If you can use such counters (or need counters of special design) on D-O-rated orders, then you can count on Veeder-Root to help you with all possible dispatch.



**VEEDER-ROOT INC., Hartford 2, Conn.**

BREVITY—Identify by IEN - 9952 if you write the maker

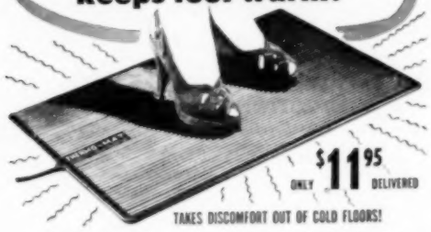
## NEW ECONOMIES with the PHOSCOTE PROCESS

THIS 6,300- ton soybean storage tank has been assured a longer, more useful life because the steel plates from which it is built were pickled and painted by the Phoscote Process. This exclusive Chicago Bridge and Iron service consists of efficiently descaling, washing and priming steel plates with a protective coat of shop paint. Take advantage of the Phoscote Process the next time you install tanks or steel plate work. When requesting quotations on tanks, state capacity, dimensions, material to be stored and location. There is no obligation on your part.

**CHICAGO BRIDGE & IRON COMPANY**
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 9953 if you write the maker

## THERMO-MAT keeps feet warm!




TAKES DISCOMFORT OUT OF COLD FLOORS!

THERMO-MAT radiates live penetrating heat from floor to knees! Insures foot and leg comfort wherever you stand or sit—in cabs, booths, at desks, check stands, counters and countless other locations! Melts ice and snow on doorsteps, etc. Safe and effective even on damp concrete. Economical—operates for a few cents per day. Reversible, long-lived neoprene rubber compound cover, lasts for years. Measures 14" x 22". Plugs into any 110-120 Volt electrical outlet. Maintains uniform temperature. Order by mail today! $11.95 delivered! Thoroughly tested. Thousands used. Performance guaranteed! Free Folder!

**THERMO-MAT CO.**
814-I South Robertson Blvd., Los Angeles 35, Calif.

BREVITY—Identify by IEN - 9954 if you write the maker

## CONSTRUCTION . . Concrete mixer rates 6 cu. ft., engine or motor drive

Source: CHAIN BELT CO.
1675 W. Bruce St., Milwaukee 4, Wis.

**The steel drum** in this new Model-6F mixer is mounted on Timken bearing rollers and is chain-connected to the drive which can be specified with an 8½ or 13-hp. Wisconsin engine or a 3-phase 5-hp. motor. Normal engine or motor speed is about 1,800 rpm. The assembly includes a power skip with the company's Shimmy shaker. Skip width at the charging end is about 51 in. with depth at 13 inches. The drum delivers into a discharge chute measuring 14½ in. in width. It is operated by a hand lever for a discharge angle of 38 degrees. The mixer is assembled on a two-wheel mounting designed so one man can spot the machine.

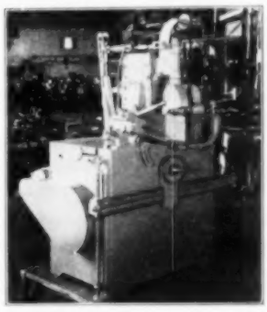
**Water** for the mix is held in a 12-gal. tank calibrated in gallons, quarts and pounds. Delivery is through an improved design of water valve. It can be overhauled by replacing two rubber washers and one O-ring at a cost of about $1.

**The assembly** weighs about 2,500 pounds. Overall dimensions are 78 in. in width by 119 in. in length with the towing pole retracted or removed, the skip down and the chute out. Overall height, with the skip up, is 87 in. and, with the skip down, is 85 inches. The mixer takes one bag of cement per charge.

BREVITY—Identify by IEN - 9955 if you write the maker

## GRINDING . . Sharpening machine for circular saw blades, 20 to 72 in.

Source: HANCHETT MFG. CO.
904-8 N. State St., Big Rapids, Mich.



**No. 772** is new air-operated design in the company's line of circular-saw sharpening machines. Adjustment for bevel from 0 to 45 deg. in each direction is accomplished by a new air-cylinder mechanism that connects to a shop air line for operating pressure at 20 to 40 pounds. The assembly also includes a new lift and feed mechanism that operates in combination with a cam to correctly grind teeth of various types.

**The machine** applies on all types of rip, trimmer, flasher and edger saws, both plain and with collars. It can be used also on solid and inserted-point log-cutting saws, paper-mill cut-off saws and saw-mill-type log deck saws. Adjustment provides for tooth pitch from ¾ to 3 inches. Drive requires a 2-hp. 1,200-rpm. motor of suitable characteristics.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9956 if you write the maker

ANOTHER Safety Star IN '51

## McDonald KANISTER KIT

ON-THE-SPOT-FIRST-AID

☆ **MOUNTS ANYWHERE** . . . in the cab of your truck, in outbuildings, on posts in construction areas. Keep a McDonald Kanister Kit handy at all times!

☆ **TREAT INJURIES INSTANTLY!** Kanister Kit affords instant first aid—prevents dangerous delays in the treatment of burns, cuts and other injuries.

☆ **EASY, SANITARY TO USE** . . . Weatherproof, metal canister opens with a twist of the wrist. Complete roll-up kit may be held on forearm to prevent contamination from ground and other sources.

☆ **STANDARD ASSORTMENTS AVAILABLE** of quality first aid materials. Or, kit can be filled to your specifications.

*Write for bulletin and prices, Today!*

**B. F. McDONALD CO.**
Manufacturers & Distributors of Industrial Safety Equipment
5737 WEST 66TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 9957 if you write the maker

## INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

**PHILLIPS PROCESS CO., INC.**
192 MILL ST., ROCHESTER, 14, N. Y.
E. A. PHILLIPS, President

BREVITY—Identify by IEN - 9958 if you write the maker

The Detroit News

## FUSE FAILURES ON LEAD POT CIRCUITS STOPPED COLD—

### BY CHANGING TO FUSETRON FUSES

**Excessive heating of ordinary fuses caused 3 to 4 fuses to open every week. Cooler operation of Fusetron dual-element fuses cured trouble completely.**

"Prior to May 20, 1950, we had a bad time keeping all the electric heating circuits on our lead pots in full operation.

"We have two eight-ton lead pots and one six-ton. Each is electrically heated by single phase, 220 volt, 10 kilowatt elements, fed from a 220 volt, 3 phase source. The circuits on each are protected by sixty 60 amp. and nine 400 amp., 250 volt fuses.

**Found 6 to 8 Fuses Blown**

"To be sure that all heating elements were operating properly, we used to check all 207 fuses about once in two weeks. Generally our maintenance electrician would find 6 to 8 of the 60 amp. fuses open.

"This meant that our melting pots were not operating at full efficiency and in addition to this loss, our fuse maintenance and purchases were greater than they should be.

**Eliminated Outages**

"As an experiment, we changed all fuses over to FUSETRON dual-element fuses of the same amperages as had been previously used.

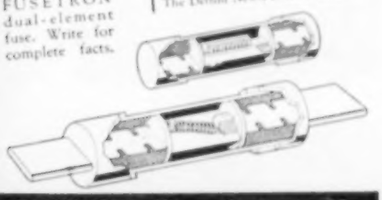
"To date, March 9, 1951, or after about nine months of using FUSETRON fuses, our records show that not one of them has failed.

"We attribute this remarkable result to the lower resistance of FUSETRON fuses which allows them to operate at a cooler temperature than other fuses that we have used."

*Henry Sidoff*, Chief Electrician
The Detroit News, Detroit, Mich.

*Don't Risk Losses in Your Plant!*

One needless shutdown, one lost motor, one destroyed panel or switch, one burned out solenoid . . . may cost you more than replacing every ordinary fuse with a FUSETRON dual-element fuse. Write for complete facts.



**BUSSMANN MFG. CO. St. Louis, Mo.**

BREVITY—Identify by IEN - 9960 if you write the maker

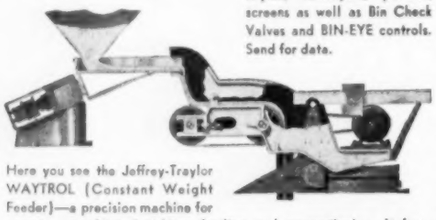
Cambridge Surface Pyrometers are light weight, portable instruments — accurate but rugged — for measuring temperature of mold cavities and flat surfaces, still or moving rolls, and within-the-mass temperature of materials in a plastic or semi-plastic state. Write for Bulletin 194-SA; 33 illustrations, many applications.

**CAMBRIDGE INSTRUMENT CO., INC.**
3710 Grand Central Terminal, New York 17
*PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS*

BREVITY—Identify by IEN - 9961 if you write the maker

**Positive Control Over Tonnage Handled**

Electric Vibrating FEEDERS — small ones and large ones—for feeding from a few ounces up to many tons per hour. Pan or tubular types with hundreds of applications in processing various kinds of material. Also electric vibrating coolers, dryers, conveyors, packers, screens as well as Bin Check Valves and BIN-EYE controls. Send for data.



Here you see the Jeffrey-Traylor WAYTROL (Constant Weight Feeder)—a precision machine for accurate weighing, batching, feeding and proportioning. It has an "electric brain". Find out about it.

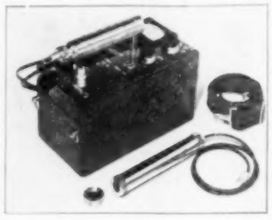
**JEFFREY**
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 9962 if you write the maker

BREVITY—Identify by IEN - 9963 if you write the maker

**TESTING . . Electronic instrument detects and measures radio-activity**

Source: TRACERLAB INC.
130-A High St., Boston 10, Mass.



**Type SU-5A** is a new alpha-beta-gama survey meter that is supplied with an optional probe for alpha detection. It is intended for use as a radiation dosage-rate meter and as a low-level contamination monitor to check laboratory equipment and to locate relatively small amounts of spilled radio chemicals.

**It will locate** radium and can be used to monitor the amount of radiation from Oak Ridge isotope shipments. It will measure dosage rates from stored radioisotopes to make certain that adequate shielding is being employed. Four scale ranges between 0.02 and 20 mr/hr. with corresponding ranges of 100 to 100,000 cpm. are provided.

BREVITY—Identify by IEN - 9964 if you write the maker

**LIGHTING . . Incandescent lamp, silicon coated for even light diffusion**

Source: GENERAL ELECTRIC CO.
1 Nela Park, Cleveland 12, Ohio

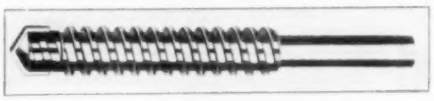
**Lists at 19 cents**

**New 60 watt** size has been added to the company's line of incandescent "white" lamps in which an inside coating of silicon compound spreads the light evenly over the surface of the bulb. The lamp casts a soft shadow. It minimizes reflected glare and has a clean white appearance.

BREVITY—Identify by IEN - 9965 if you write the maker

**ROCK DRILLING . . Carbide tipped drill with spiral leads for use in masonry**

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



**The spiral lead** on the shank of this new Speed Spiral rock or masonry drill provides passages from the two faces of the carbide tip to carry dust away from the tip. The result is free cutting action when the drill is rotated by a suitable portable electric or pneumatic tool. The drill is machined from the solid with a round nose supporting the tip in a design that provides ample dust clearance. Holes can be drilled to 12 in. in depth without stopping or removing the tool according to tests the company has made.

**Sixteen sizes** in a standard-length design range from ¼ to 1½ in. in diameter and from 2½ to 10 in. in length overall. List price is $1.80 to $12.90. Thirteen sizes in an extra-long series ranges from ¼ to 1½ in. in diameter and from 12 to 24 in. in overall length. Their list price is $4 to $17.50.

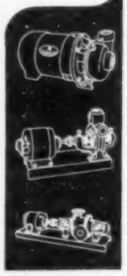
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9966 if you write the maker

**APCO *Packaged* CONDENSATION RETURN UNITS**

for the SMALL LOW PRESSURE JOBS

10 to 40 lbs. with 8, 15, 30 Gallon Receivers



**Packaged Duplex Condensation Return Unit with No. 4 Series Apco Pumps.**

Start saving valuable heat units with APCO Square Tank Units. Built to meet demand for a smaller unit with the superb performance of our larger units. Remember, the Pumps are Apcos. No Vapor Binding — Special Provision for Expansion and Contraction — No Frictional Wear within pump. Thus, ECONOMY.

*Write for Bulletin 113-S7*

DISTRIBUTORS IN PRINCIPAL CITIES

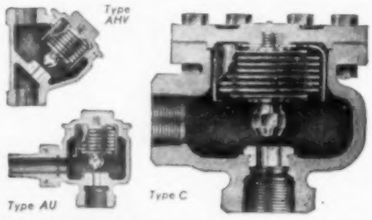
AURORA Always PUMPS — AURORA PUMP COMPANY
52 Loucks Street, Aurora, Illinois

BREVITY—Identify by IEN - 9967 if you write the maker

**Nicholson Traps Help**

# CUT STEAM COST $500,000 A YEAR

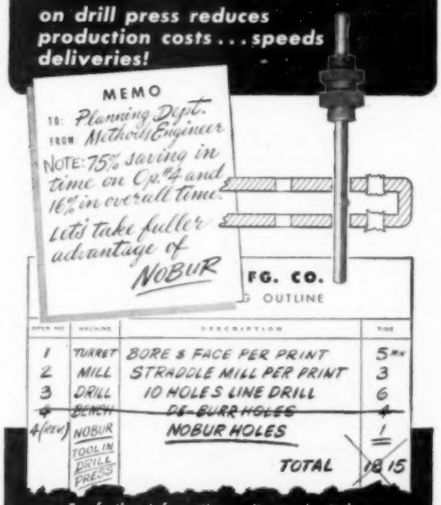
At one of the nation's large processing plants a campaign to promote economical steam use by improving heat transfer efficiency has resulted in a yearly saving of $500,000. Credit for a fair portion of this is given to improved steam trapping, which resulted from the installation of Nicholson thermostatic traps. To see why an increasing number of leading plants are standardizing on Nicholsons for positive drainage and faster heat transfer, send for BULLETIN 450.




**W. H. NICHOLSON & CO.** 159 OREGON STREET WILKES-BARRE, PA.
*Sales and Engineering Offices in 55 Principal Cities*

BREVITY—Identify by IEN - 9968 if you write the maker

**Deburring with NOBUR tool**
**on drill press reduces production costs . . . speeds deliveries!**




*For further information, write or wire today*
**NOBUR MANUFACTURING COMPANY**
717 NORTH VICTORY BLVD. • BURBANK, CALIFORNIA

BREVITY—Identify by IEN - 9969 if you write the maker

THE ANSWER TO
COMPACT
DEPENDABLE
PRECISION-BUILT

PHILADELPHIA GearMotoR

**MOTORIZED SPEED REDUCTION**

These units greatly simplify the direct application of electric drive to individual machines. They are available in single, double or triple reductions, offering a range of speeds: 780 through 7.5 r.p.m. Motor rating from 1 h.p. through 60 h.p.—A-c or D-c. The motors and gear units are each self-contained and readily separated . . . gears in multi-reduction units may be inspected, without uncoupling from driven machine.

**GearMotoR** conforms to the recommended standards of the American Gear Manufacturers Association and the National Electrical Manufacturers Association.

**CATALOG**

Send for 42-page illustrated **GearMotoR** catalog GM 48, containing full information and data necessary for ordering and please use your Business Letterhead when requesting same.

**PHILADELPHIA GEAR WORKS, Inc.**
*Industrial Gears and Speed Reducers*
Erie Avenue and G Street Philadelphia 34, Pa.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA. •
In Canada: William and J. G. Greey Limited, Toronto

BREVITY—Identify by IEN - 9970 if you write the maker

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency... how to simplify your installations... how to conserve valuable plant space... how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 9971 if you write the maker

## DESIGN FOR Ruggedness

HARTWELL H-5150 Flush Latch

The new H-5150 flush latch is ideal for any use calling for a large, rugged latch. Its bolt contains a spring loaded button that allows for variations in closure contact due to misaligned doors and frames. The 1¼" x 1½" operating trigger makes this latch easy to open even when operator is wearing heavy gloves or mittens. The H-5150 is made of stainless steel, coated cold rolled steel or heat treated aluminum in various offset combinations for different door and frame thicknesses.

Write for new Hartwell Flush Latch and Hinge Catalog.

**HARTWELL COMPANY**
9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

BREVITY—Identify by IEN - 9972 if you write the maker

Fill up cracks, ruts, shallow holes, uneven spots, etc., in concrete floors with Smooth-On No. 7B Quick Floor Patch Cement. The patch will harden quickly, adhere strongly to an old floor, and is ready for use as soon as it is hard.

Anyone can apply Smooth-On No. 7B by following the simple directions that come with it. The patches will stay tight, because Smooth-On No. 7B expands slightly as it hardens and wedges the patch securely in place.

Order Smooth-On No. 7B Quick Floor Patch Cement in 1-, 5-, 20- or 100-lb. size.

**FREE** FLOOR PATCH FOLDER AND METAL REPAIR HANDBOOK

Folder gives full information on Smooth-On No. 7B Quick Floor Patch Cement. With it we'll send you the famous 40-page Smooth-On Repair Handbook, full of time-saving, money-saving repairs on plant and home equipment. Send now.

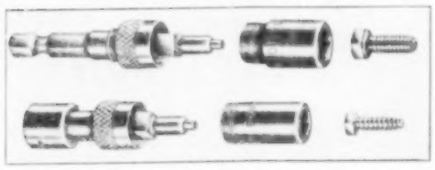
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON QUICK FLOOR PATCH CEMENT

BREVITY—Identify by IEN - 9973 if you write the maker

## SCREW DRIVING . . Magnetic head, replaceable socket for headed screws

Source: MAGNA TOOL CORP.
Washington & Goodell Sts., Buffalo 3, N. Y.



**Alnico magnet** faced with a tip of hardened steel applies in the spindle end of this new socket-type driving head for self-tapping and sheet-metal screws. The magnet holds the screw in the socket. It follows out toward the end as the screw rotates into its hole. The sockets are replaceable. Magna-Tip is the trade name.

**Sizes** include a ¼-in. hexagon shank with a ¼-in. square to take square-drive sockets. These sockets are available in three hexagon openings to fit No. 6 to ¼-in. hexagon-head screws. The driving member also is available with a ¼-in. square female adaptor to apply with the same line of sockets.

BREVITY—Identify by IEN - 9974 if you write the maker

## HARD FACING . . Welding electrode for equipment parts subject to wear

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Dept. P, Flushing 58, N. Y.

Minimizes distortion

**EuteChrom 2X** is a new flux-coated alloy electrode in the company's FrigidArc line. It has been developed for use on equipment parts made of carbon steel and alloy steel subject to severe abrasive wear and comparatively mild impact. Application is with ac. or dc. arc-welding equipment. Four sizes are ¼ to 3/16 in. in diameter.

BREVITY—Identify by IEN - 9975 if you write the maker

## WEIGHING . . Dial scale for direct readings to 40 pounds

Source: EXACT WEIGHT SCALE CO.
942-46 W. Fifth Ave., Columbus 8, Ohio

**Type 9300** is one of the assemblies in a new line of Fan Dial scales. The complete line includes five types and 23 models with capacities from 1 to 40 pounds. The scale assembly includes a lower check-stabilizing link and hair-line indicator with adjustable dash pot and a Plexiglas window over the indicator and dial. The scale is assembled to absorb the treatment it can expect to meet in industrial use. The gray baked-enamel finish will not show dirt or scratches.

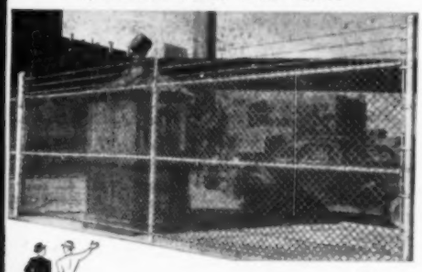
**Model 9300** mounts a 12 by 14 in. stainless-steel platter or a 10 by 18-in. nickel-silver open scoop. Dial span measures 14 inches. Overall length is 30 in. with width at 12 in. and height at 26½ in. measured overall.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9976 if you write the maker

## PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •



**Defense** against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

*Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.*

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 9977 if you write the maker

## REDUCE HANDLING of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks* — individual units which lock together to form racks of any size, shape or capacity.

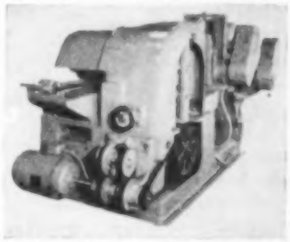
STACKBINS IN STACKRACKS

*Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa*

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM "Stacked and Still Accessible"

BREVITY—Identify by IEN - 9978 if you write the maker



Worthington Allspeed Drive Tandem Belt Design

Its two-belt tandem design permits the widest range of instantaneous, stepless variations . . . far greater than single belt drives.

The tandem's narrower belt reduces flex wear, increases belt life (it's less affected by side compression).

Other features: easy replacement—all wearing parts bronze bushed—shielded, life-lubricated bearings. In-line input and output shafts. Can run in any direction. Available in 6 sizes from 1-15 hp, up to 16-1 ratios. Supplied with or without standard NEMA Frame 1750 rpm motors. Upright or horizontal frame. Extended control yoke available. *Worthington Pump and Machinery Corporation, Allspeed Drive Division, Holyoke, Mass.* AS.1.6

**WORTHINGTON**

THE GOOD RIGHT HAND OF INDUSTRY

BREVITY—Identify by IEN - 9979 if you write the maker

## The FIRST Cable to link the Old and New Worlds

was completed by Cyrus W. Field Aug. 5, 1858—revolutionizing then existing communications.

JERVIS B. WEBB COMPANY was the FIRST to develop—

## POWER and FREE CONVEYORS

—an outstanding development in materials handling.

More important than movement from "here to there" is the "pacing"—the setting up the movement of materials so the operators can work in rhythm. Webb Power and Free Conveyor Material Handling Systems give this "rhythm"—yet allow off-the-line placing of loads to desired points without interrupting the flow. They reduce costs, increase efficiency and productivity.

Offering complete flexibility in meeting production problems, Power and Free Conveyors can be tailor-made to your requirements—for any plant large or small. Some of their advantages include:

- Loads are pushed, switched manually or automatically, can be lowered vertically, dispatched automatically by pre-setting carriers, and can be stopped momentarily anywhere along route.

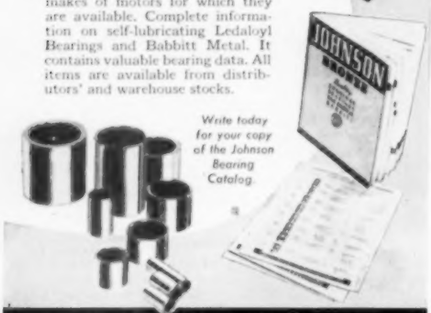
CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
1951 ALPINE AVE. DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 9980 if you write the maker

## JOHNSON BEARING CATALOG

Ready for You!

THIS latest catalog describes and lists sizes of Johnson GP (General Purpose) Bronze Bearings and Bushings, Cast Bronze Graphited Bearings, and UNIVERSAL Bronze Bars. It describes Electric Motor Bearings and lists makes of motors for which they are available. Complete information on self-lubricating Ledaloyl Bearings and Babbitt Metal. It contains valuable bearing data. All items are available from distributors' and warehouse stocks.




*Write today for your copy of the Johnson Bearing Catalog.*

SLEEVE BEARING HEADQUARTERS *Since 1901*

Johnson Bronze

476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 9981 if you write the maker

## FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too— and it may suggest an entirely new application in *your* plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

**VONNEGUT MOULDER CORPORATION**

1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 9982 if you write the maker

THE *Multiple-Purpose* FLOOR-MAINTENANCE MACHINE THAT'S *Two Sizes in One!*

Here is a machine that not only can be used to scrub, apply wax, polish, steel-wool, scrub rugs, and disc-sand, but also affords the further economy of a machine that is two sizes in one. This *100 Series Finnell*, in one of the larger sizes as shown above at left, can be reduced to the small size unit shown in circle. Note the low, trailer-type construction of the machine, and how easily it goes beneath furnishings. Three sizes: 13, 15, and 18-inch brush diameter. For consultation, demonstration, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 2610 East St., Elkhart, Ind.

**FINNELL SYSTEM, INC.**
*Pioneers and Specialists in* FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

# NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 9983 if you write the maker

**BENDING . . New house publication features news on pipe and tube bending equipment**

Pines Engineering Co.
638 Walnut St., Aurora, Ill.

**First issue** of "Pines Engineering News" describes the pipe and tube bending department of a large machinery maker, lists suggestions on bending-machine maintenance, outlines equipment available from the company. The publication will be issued every other month, is letter size and punched for binding. Your name will be added on request.

BREVITY—Identify by IEN - 9984 if you write the maker

**BRUSHES . . New method developed for descaling hot-rolled steel by brushing**

Osborn Mfg. Co.
5403 Hamilton Ave., Cleveland 14, Ohio

**Mechanical method** has been developed by the company to remove cooling scale from the surface of steel strip, bar, rods. It employs brushes and special machines, removes and salvages the scale, improves the surface and physical characteristics of the steel prior to further processing. Speeds can be 200 to 500 fpm. The company is prepared to advise on specific applications as to equipment, brushes and their use.

BREVITY—Identify by IEN - 9985 if you write the maker

**BUILDING . . Prefabricated shelter assembles from standard porcelain enamel panels**

Porcelain Enamel Institute Inc.
1008-12 Vermont Ave., N. W., Washington 5, D. C.

**Guard** shelters, transportation waiting shelters are typical applications for new structure on which detail information is available through the Institute. The unit assembles from panels that are made of porcelain enamel bonded to both sides of a Kaylo slab. Panel size is 2 by 4 feet. Framework, roof and supports are aluminum. Glass panels can be added. Similar structures can be built in 4-ft. multiples.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 9986 if you write the maker

## SPEEDY AIR VISE

SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

**GRIPPING FORCE 15 TIMES AIR LINE PRESSURE**

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

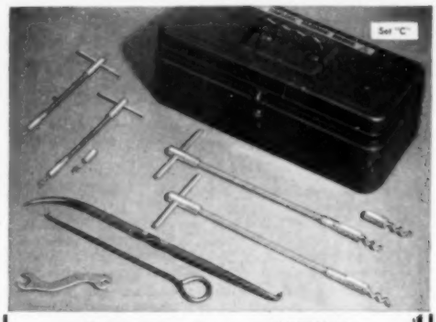
*Complete with Foot Control, Air Hose and Fittings*.....only **$29.90**

*Prompt Delivery from Your Supplier or Write Direct*

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 9987 if you write the maker




## GARLOCK'S NEW FLEXIBLE PACKING HOOKS

**with removable screw tips**

Designed for removing old packing from stuffing boxes quicker and easier. The flexible shaft can be bent when working in cramped quarters. Screw tips can be removed and replaced instantly. Set "C" contains 2 flexible hooks 6¼" long, 2 flexible hooks 10⅝" long; 1 double-end packing tool 12" long; 1 solid packing hook 8" long, 1 wrench; 2 extra screw tips; metal tool box.

*Write for folder*

**THE GARLOCK PACKING COMPANY**
PALMYRA, NEW YORK
*In Canada:* The Garlock Packing Company of Canada, Ltd., Toronto, Ont.

GARLOCK

BREVITY—Identify by IEN - 9988 if you write the maker

## *For Production Stud Setting, Drilling, Tapping and Assembly*

**Automatic Self-Opening Stud Driver — 100 Series**

Automatic take-up for wear on jaws. Affords accurate maintenance of projection heights. Inexpensive method of clutch renewal gives double wear at half the cost.

**Titan-Kirkland Combination Stud Driver and Puller**

Incorporates roll action to grip as little as ½" of unthreaded body of stud. Made in T-Handle, Ratchet, and Power styles.

**Solid Type Stud Driver**

Built for rugged use on heavy engines. Equipped with Titan Design, Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power.

**Titan Quick-Change Chuck**

Affords closest possible center to center set-ups, with quick change and positive drive included. Exclusive Slip Ring under tension a distinct advantage in turret lathe application.

WRITE FOR LITERATURE TODAY

**TITAN TOOL CO.**
*Production Tools*
52 Main St., FAIRVIEW (Erie County), PA.

BREVITY—Identify by IEN - 9989 if you write the maker

## SIMPLIFY EQUIPMENT CONTROL WITH *Ledeen* CYLINDERS

For straight line power movement. Air, oil or water operation. Medium Duty, Heavy Duty, and Super Duty models.

*Write for Bulletin 500.*

*Ledeen* **VALVES**

For actuating air or hydraulic cylinders. 14 different models for 5 different cycles, in 6 sizes. Hand, foot and power operated.

*Write for Bulletin 510.*

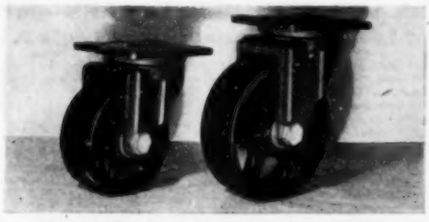
*Ledeen* **VALVE ACTUATORS**

For actuating any make, size and type of valve, against any line pressure, on any fluid medium, and with any pressure available. For on-and-off or positioning service. Positive in action, economical in cost.

*Write for Bulletin 512.*

*Ledeen Mfg. Co.*
1602 San Pedro St.
Los Angeles 15, Cal.

BREVITY—Identify by IEN - 9990 if you write the maker



## Safe handling for extremely heavy loads

The heaviest loads can be safely handled on these precision-built casters.

If you have heavy equipment to move, and ease of movement and safety are important factors, these 8 in. and 10 in. Bassick Series "93" Casters will do the job—and do it better. Forged steel plates, rugged malleable frames, Timken type wheel and thrust bearings, heat-treated high tensile alloy wheels—machined precision tolerances—are features which give these machine tools of motion the backbone to work for years without showing their age.

Bassick, world's largest manufacturer of casters, has an economical type for every materials-handling condition. Address your problem to THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

**Bassick** MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

BREVITY—Identify by IEN - 9991 if you write the maker

# SPEED UP

## Pangborn

**Hydro-Finish** is versatile! Use it to speed up cleaning, polishing and finishing of molds and dies as well as production line work.

Hydro-Finish saves you time, labor and money. Scale and discoloration are removed in *minutes* instead of hours. Cleaned surfaces are virtually free of directional grinding lines. Costly hand work is greatly reduced. No danger of excessive metal removal because tolerances are held to .0001". Fine mesh abrasives suspended in water do a precision job.

Find out how Pangborn Hydro-Finish improves product quality, increases tool and die life! For full details, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

*Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.*

**Pangborn**

**BLAST CLEANS CHEAPER with the right equipment for every job**

## NEWS NOTES—Continued

*"Useful information on chain drives"*

BREVITY—Identify by IEN - 9993 if you write the maker

**CLEANING . . How to clean aluminum prior to spot welding described in booklet**

Oakite Products Inc.
116-A Thames St., New York 6, N. Y.

**Instructions** on cleaning, deoxidizing, rinsing and drying aluminum before spot welding are contained in new 18-page pocket Booklet F-8315. It describes materials and methods, makes suggestions on equipment, includes schedules on immersion time with two of the company's materials.

BREVITY—Identify by IEN - 9994 if you write the maker

**CONDUCTORS . . Useful information booklet on plastic insulated cables for chemical plants**

Bakelite Co.
30 E. 42nd St., Dept. 1503, New York 17, N. Y.

**Properties** of electrical cable for service in chemical plants are described in new 16-page "Katbelitems No. 54" along with performance of polyethylene and vinyl chloride plastics in the insulation. Details are given on an installation including pulling and splicing. Pictures show steps in splicing.

BREVITY—Identify by IEN - 9995 if you write the maker

**CONDUCTORS . . Bulletin tells how much copper there is in 1,000 feet of electric wire or cable**

Rome Cable Co.
440 Ridge St., Rome, N. Y.

**Pounds of copper** per thousand feet is listed by conductor size in new 10-page looseleaf bulletin, "Copper Weights". It covers building wire, non-metallic sheathed wire, service cable, power cable, portable cords, welding cable.

BREVITY—Identify by IEN - 9996 if you write the maker

**CORROSION PROOFING . . Slide calculator to figure magnesium-anode protection for pipe lines**

Federated Metals Division
120 Broadway, Room 1043, New York 5, N. Y.

**Size and life** of a magnesium anode, length of pipe protected, current output required, can be determined by new slide calculator known as "Magnesium Anode Cathodic Protection Guide". It is available on letterhead request to those concerned with cathodic protection of pipe lines from corrosion. Size is 9 by 3½ inches. Construction is of cardboard.

BREVITY—Identify by IEN - 9997 if you write the maker

**DRIVES . . Engineering data booklet to assist in selection and use of chain drives**

Whitney Chain Co.
235-9 Hamilton St., Hartford 2, Conn.

**"Helpful Data Book"** titles new 32-page Catalog HD-51 on chain selection and application. It describes chain types and parts, lists comparative dimensions for chain by the company and five other manufacturers, includes conversion tables on chain pitches to feet. There are formulae applying to chain calculations and tables of decimal equivalents, areas, weights.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 9998 if you write the maker

**Dutton EconoTHERM "PACKAGED" STEAM GENERATOR SHOWS BIG SAVINGS!**

LEFT—Compact 160 h.p. EconoTHERM.
RIGHT—Bulky old 90 h.p. boiler required 3 men.

**READ WHAT OFFICIALS SAY AT W. B. PLACE & COMPANY, HARTFORD, WIS., CUSTOM DEERSKIN TANNERS:**

*"We are very much pleased with the Dutton gas-fired boiler . . . it has done an excellent job of heating, and been practically trouble free."* As to cost of operation, *"our bills to date indicate a substantial saving . . . a big saving in labor."*

From a cold start, the Dutton will produce 125 lbs. of steam pressure in just 15 minutes. The old unit took 2½ hours! *Exclusive* "off-center firing" with rotary combustion gives you faster steaming with greater safety. These and many other features make EconoTHERM superb for heating, processing and power uses. Gas or oil fired.

**Get all the details — WRITE NOW FOR ECONOTHERM BULLETIN EC-100J**

Other types and sizes — 5 to 250 h.p.

**Dutton BOILER DIVISION**
HAPMAN-DUTTON COMPANY • KALAMAZOO, MICH.
Boiler Makers Since 1880

BREVITY—Identify by IEN - 9999 if you write the maker

**QUICK DELIVERY ON VALVES!**

**HANNIFIN** *precision built* **VALVES**

***for single or double-acting cylinders***

Hannifin precision-built valves are *reliable*—and quickly *available!* For positive, accurate control of air-powered equipment, there is a Hannifin valve that will give long-time service in production operations.

**QUICK DELIVERY IN ANY QUANTITY!**

**Hand operated.** Simple design avoids leakage, waste of power—gives positive control. Sizes ⅛" to 1¼".
Also foot-operated types—leave operator's hands free. Sizes, ⅛" to ¾".

**Foot operated.** Fast, effortless action. Pilot operated, air pressure does the work.
Also finger-tip actuated models.

**Write for Bulletins 57, 240, 241**

# HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

BREVITY—Identify by IEN - 10000 if you write the maker

# make Stronger solder joints Quicker and Cheaper!

**IDEAL Thermo-Grip**

Using "Fork" in tight space to "spot-point" the heat.

***STRONGER***—resistance heating provides ample concentrated heat—assures full adhesion of solder.

***QUICKER***—heating begins instantly. No preparation, no pre-heating, no set up.

***CHEAPER***—no wasted time or current. No chance of melting nearby joints or burning parts. No risky open flame.

Proved by thousands of manufacturers. Sizes for every soldering or brazing job.

"Standard" 1000-Watt Model with "Plier", "Fork" and "Pencil" attachments also available.

**FREE TEST! You Be the Judge**

IDEAL INDUSTRIES, Inc.
1108 Park Avenue
SYCAMORE, ILLINOIS

Please arrange FREE Thermo-Grip demonstration and send catalog data.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE ____

BREVITY—Identify by IEN - 10001 if you write the maker

# NEW PYLE-NATIONAL ANCHORLITE

**THE SUSPENDED INSIDE AND UNDERSIDE ILLUMINATOR**

**For *Expediting* Loading of freight cars, trucks and trailers**

- **Self Retracting**
- **Self Anchoring & Adjusting**
- **Self Releasing**

**Saves man hours**
**Reduces maintenance and Replacement Costs**
**Reduces fire and accident hazards**

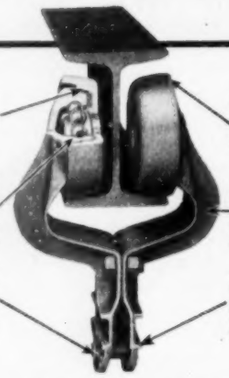
**Write for Anchorlite Bulletin**

**THE PYLE-NATIONAL COMPANY**

1348 N. Kostner Ave. Chicago 51, Illinois
Agents and Representatives in the Principal Cities of the United States and Canada

BREVITY—Identify by IEN - 10002 if you write the maker

**Your conveyor dollars go farther with LINK-BELT trolleys**



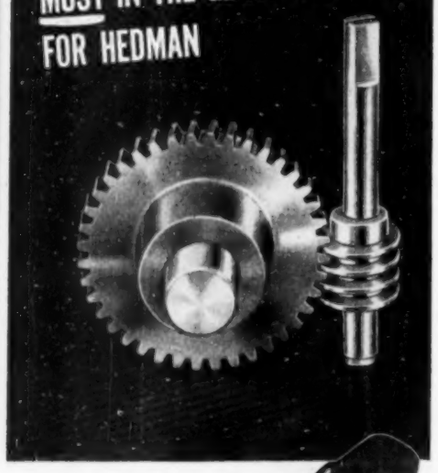

**LINK-BELT**

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8.

Write for Folder 2241-B.

BREVITY—Identify by IEN - 10003 if you write the maker

**RUGGED SERVICE IS A MUST IN THE GEARS WE MAKE FOR HEDMAN**



THE newest HEDMAN custom model F & E CHECK PROTECTOR has been engineered to the most exacting specifications. Every component is designed and manufactured to make this the fastest, most efficient and least fatiguing Check Protector ever built! If there was ever a device in which fine, *really rugged* Fractional Horsepower Gearing is an essential requirement, *this is it!* F & E Check Protectors must perform consistently, year in and year out, with unfailing mechanical precision. That's why The Hedman Company specifies "G.S." for the Small Gearing they use. More and more of America's largest and most particular buyers are looking to G.S. for decidedly better, more uniform Small Gearing. Here you, too, can expect the kind of sincere, friendly, helpful cooperation which means so much to your business and profits. When *production runs* of custom-made Fractional Horsepower Gearing are involved—*PUT IT UP TO "G.S."!* Call us in at the drawing board stage. Let our capable engineers give ideas, suggestions and cost estimates. No obligation. Send drawings or write today!

**Send for** Free New 6-page folder illustrating, and describing G.S. facilities, Small Gearing and applications, with handy charts. Will you ask for it on company stationery, please?

**GEAR Specialties, Inc.**

Spurs · Spirals · Helicals · Bevels · Internals · Worm Gearing · Racks · Thread Grinding

2635 WEST MEDILL AVE., CHICAGO 47, ILL.

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

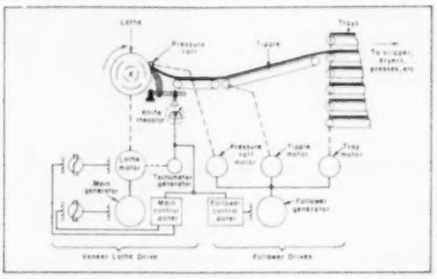
## NEWS NOTES—Continued

*"Information on fastenings by their AN number"*

BREVITY—Identify by IEN - 10005 if you write the maker

**DRIVE . . New application of Amplidyne in variable-speed drive for a veneer lathe**

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.




**Schematic** arrangement is illustrated for a new electric veneer-lathe drive based on the company's Amplidyne control equipment. Lineal speed is held constant for the veneer being peeled as the log diameter decreases. Speed of follower drives is kept in step automatically. Optimum speed is held constant. Regenerative braking is employed for a quick stop.

**Control starts** with a knife-operated rheostat and a motor-mounted tachometer generator. A voltage is obtained proportional to lineal sheet speed. This voltage is used to regulate the speed of the drive motor. Details on operation and the components are contained in four-page Bulletin GEA-5596, available on request through IEN or direct from the company.

BREVITY—Identify by IEN - 10006 if you write the maker

**FASTENINGS . . Cardboard slide selector presents data on AN stainless steel fastenings**

Anti-Corrosive Metal Products Co.
851 River Road, Castleton-on-Hudson, N. Y.

**"AN Fastening Selector"** is a 4 by 8½-in. slide chart that presents detail information on stainless-steel nuts, bolts, screws, rivets, washers, cotter pins by their AN number. It enables you to tell what type of fastening the number specifies, its size and thread, length, any special construction, and the page number where it can be found in the company's catalog. This catalog was reviewed previously IEN-01474-50.

BREVITY—Identify by IEN - 10007 if you write the maker

**FORGINGS . . Design possibilities shown in booklet on die-pressed forgings in brass and bronze**

American Brass Co.
696-700 S. Main St., Dept. DPF, Waterbury 20, Conn.

**Characteristics** of die-pressed forgings in copper and copper alloys are stressed in revised edition of the booklet, "Anaconda Die Pressed Forgings". The 12-page booklet reviews the forging process, describes properties of the finished forgings, illustrates the range of shapes that can be produced, typical parts made from the forgings, includes a table of physical properties on 14 alloys suited to the process.

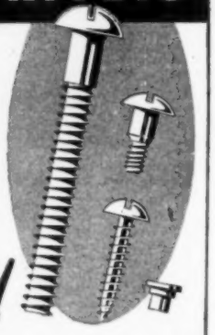
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10008 if you write the maker

**Beaver·Bilt SCREWS STUDS · RIVETS**

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



*Prompt Delivery!*

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

**Beaver Industries**
METAL FASTENER DIVISION
1500 WEST ADAMS STREET, CHICAGO 7, ILL.

BREVITY—Identify by IEN - 10009 if you write the maker

**EXACT WEIGHT SCALES—one of Industry's most useful tools . . .**

The applications of EXACT WEIGHT Scales in manufacturing operations are almost numberless and they increase daily. Here are but a few American industry ordered units for and installed in the last 90 days alone—abrasives, balancing hammers, spring testing, checking rods, jet buckets, counting screws, aircraft parts, filters for oil filters, optical glass, laminations, gas mask canisters, checking pistons, carbon black, paint pigments, checking 20 MM projectiles, evaporation tests, color matching, brass forgings and many others. If you want to cut costs and generally improve a product submit your problem. You will be surprised what can be accomplished by weighing with strictly industrial units fitted to your job.

**EXACT WEIGHT SCALES**
*Industrial Precision*

**THE EXACT WEIGHT SCALE COMPANY**
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 10010 if you write the maker

**FROM KANSAS CITY TO KOREA...**

The economical answer to your Method-II protective packaging requirements is **DESICCITE #25* dehydrating agent,** fully approved by all branches of the Armed Services. Manufacturers everywhere are now eliminating losses from moisture damage by the use of highly efficient, odorless, inert Desiccite #25. Protect your products during storage, shipment, and shelf-life with Desiccite #25.

**Desiccite #25** *is immediately available in a wide range of bag sizes through conveniently located distributors.*

★ *Write today for full information.*

DESICCANT DIVISION *Filtrol* CORPORATION

General Offices: 727 West Seventh Street, Los Angeles 17, California

*T. M. Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 10011 if you write the maker

**Plywood**
WOOD OF 1001 USES

**Fast 24-Hour Shipping Service from AETNA Plywood's 4 Warehouses**

*Big Plywood advantages . . .*

1. LARGE SIZE PANELS—4' x 8'. Saves labor costs and time.
2. SPLITproof, WARP resistant. Stronger than steel!—(weight for weight.)
3. LIGHTweight, Cuts Easy, Durable. Goes up fast, paints smoothly.

Over 40 species—Fir, Gum, Birch, Walnut, etc. in stock 1/16" to 3" thick, 36" x 48" to 48" x 192".
Write for FREE Plywood Buying Guide, the Teleply Ticker Price List #535, today.

**AETNA PLYWOOD & VENEER CO.**
1724 N. Elston Ave., Chicago 22, Ill. ARmitage 6-7100
Branch Warehouses: Grand Rapids 4, Mich.; Indianapolis 21, Ind.; Rockford, Ill.

BREVITY—Identify by IEN - 10012 if you write the maker

SPACE AND LABOR Saving MATERIAL STACKER

**MOTO-TRUC**

**TELESCOPIC HI-LIFT TRUCK**

**Moto-Truck Battery Operated Walkie Type Trucks offer you these exclusive advantages over any other make:**—Shortest overall length facilities operation in narrower aisles, most convenient controls in easy-grip roller type handle, greatest stability due to four-point mounting under load, patented articulating hinged spring unit which holds drive wheel down on floor, and exclusive braking system for greatest safety. Capacity 3,000 and 4,000 pounds.

*Write for Bulletin No. 51*

The MOTO-TRUC Co.
1053 E. 59th Street
CLEVELAND 3, OHIO.
Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

HI-LIFT, PALLET, PLATFORM AND TRACTOR TYPE TRUCKS

BREVITY—Identify by IEN - 10013 if you write the maker

MORE SOLD THAN ANY OTHERS

*Write for Catalog*

OF USES AND SPECIFICATIONS

**GENERAL**

**Industrial Pneumatic Tires**

**..SAVE TIME·LABOR·MONEY**

*Protect equipment and floors • Reduce Breakage*

- ★ Wide Base Wheel
- ★ More Air Volume
- ★ More Stability
- ★ More Load Capacity
- ★ Longer Miles in Hi-Speed Service

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

*Rigid* **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

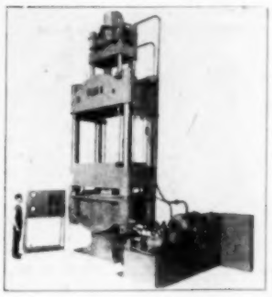
*Send for Catalog • Dept. 3*

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 10015 if you write the maker

## PLASTIC MOLDING . . Hydraulic press combines compression and transfer action

Source: AMERICAN STEEL FOUNDRIES
1150-A Tennessee Ave., Cincinnati 29, Ohio



**Rating** is 1,000 ton for the main compression stroke and stroke length is maximum at 27 in. in this new Elmes combination compression and transfer molding press. The transfer ram has 300-ton capacity and operates through a 20-in. stroke. Operation can be selected for straight compression or for transfer molding by operating a switch on either of two push-button control panels. One of these panels locates at the press and is shown in the illustration. A separate duplicate panel is designed to set up in a separate room to provide complete remote control.

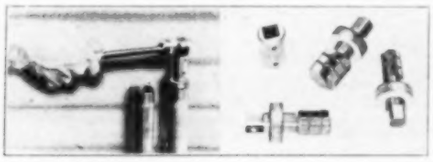
**Two breathing intervals** are provided in the compression cycle with opening during the breathing controllable to ¼ inch. The curing cycle is set by a motor-type timer for any required range. The pump is equipped with compensating control so only the required minimum of power is employed while curing proceeds.

**The main press** operates at 259 ipm. for advance, 7 ipm. for the power movement and 266 ipm. on the return. The transfer ram operates at 125, 24, and 65 ipm. Die space measures 72 by 50 inches. Platen to head is 60 in. vertically and between the bolsters is 36 inches. A mechanical knockout is provided in the upper head and a hydraulic one in the lower head. Strokes are respectively 4 and 12 inches.

BREVITY—Identify by IEN - 10016 if you write the maker

## WRENCH . . Toothed cam design engages the interior of a pipe or tube

Source: CLARK BROS. MFG. CO.
Highway 4, Dept. IEN, Hillsboro, Oregon

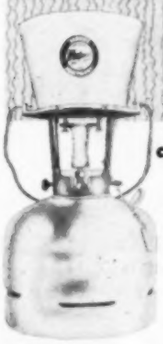


**The toothed head** in this new wrench acts as a cam or follower when the head has been inserted in a pipe or tube and the square-ended steam is turned. The parts pull outward to grip the inner wall of the pipe and hold it firmly for turning by means of a suitable wrench. On reversing the action the gripping pressure is released at a central point and grips again on further turning for drive in the opposite direction. A detachable rubber collar prevents the wrench from falling into the pipe when it is applied vertically. Five sizes apply in pipe ranging from ¼ to 1 in. in nominal size. The squared end measures ½ inch.

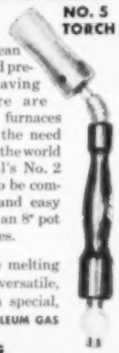
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10017 if you write the maker

FASTER, CLEANER HEAT WITH PROPANE* at LESS COST!



NO. 2 FURNACE



NO. 5 TORCH

For every craft or trade where fast, clean heat for melting and preheating means saving man-hours, there are MUTUAL LP-Gas furnaces and torches to fit the need exactly. Tradesmen the world over know Mutual's No. 2 Propane Furnace to be compact, lightweight, and easy to use. It will melt an 8" pot of lead in 12 minutes.

For heavy duty preheating and close melting MUTUAL offers the No. 5 Blow Torch, a versatile, easy-to-control fast working torch with a special, cool-grip handle.

*LIQUEFIED PETROLEUM GAS

WRITE FOR COMPLETE CATALOG

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3400 WEST IMPERIAL HIGHWAY INGLEWOOD, CALIF.

BREVITY—Identify by IEN - 10018 if you write the maker

MERCURY "A-310"
INDUSTRIAL TRAILER

Standard Type "A-310" Trailer

Type "A-310" with Box Body

Type "A-310" with Dump Body

**OVER 250,000 NOW IN USE**

Over 250,000 Type "A-310" trailers now performing a variety of plant transportation jobs—attest the wide popularity of this versatile unit.

Standardized in every essential that assures long life, low cost, user satisfaction, the "A-310" incorporates the following features: heavy steel frame; ball bearing casters; rubber-tired, roller-bearing wheels; heavy axle and brackets.

While standardized in detail, "A-310" flexibility in design permits wide variation in construction and size to meet your particular requirements.

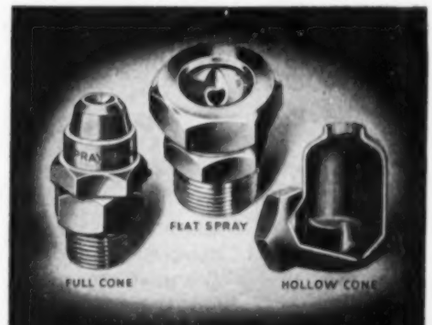
Submit blueprints on your trailer requirements for Mercury quotation. Or, if you prefer, request Bulletin A-100.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St.
Chicago 9, Ill.

MERCURY

TRACTORS • TRAILERS • LIFT TRUCKS

BREVITY—Identify by IEN - 10019 if you write the maker




**SPRACO NOZZLES**

*Write for* NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 10020 if you write the maker

**YOU CAN DO** so many different jobs —so much better— so much *faster* with a **DELTA UNISAW**

- ★ RUGGED CONSTRUCTION FOR STEADY PRODUCTION
- ★ BIG CAPACITY
- ★ HIGH SPEED
- ★ EXTREME ACCURACY

*Meanwhile, write for the complete Delta catalog that describes it and other fine Delta tools.*

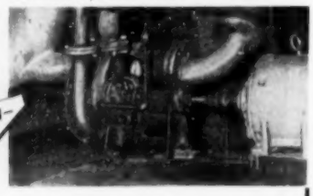
Just what the name implies . . . a truly universal saw. It's a 10" tilting arbor saw that makes a 3⅛" cut . . . tilts to 45° . . . cuts to center of a 50" panel . . . makes perfect mouldings . . . cuts dadoes and tenons accurately . . . at high speed and low cost.

The initial investment for this time-saving, money-making Unisaw is less than you would think. Ask your Delta dealer about the Unisaw today.

*There's a Delta Power Tool for Your Job*- Wood or Metal Working
53 MACHINES — 246 MODELS — MORE THAN 1300 ACCESSORIES

DELTA MILWAUKEE Rockwell
DELTA POWER TOOL DIVISION
MANUFACTURING COMPANY
615L E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 10021 if you write the maker




**How a manufacturer cut costs with Goulds stainless steel pumps**

Here's how an alert manufacturer cut his pumping costs by ¾. The pumps he had handling a highly corrosive liquid cost $3250. When they wore out, he replaced them with Goulds Stainless Steel Centrifugals for $826. The Goulds pumps have already lasted twice as long . . . and they're still going strong. Advanced design, simple construction, and extra-protected, interchangeable parts make these savings possible. For complete information write Pump Headquarters, Seneca Falls, N. Y.

Ask for Bulletin 725.5.

Goulds PUMPS INC. Seneca Falls New York

BREVITY—Identify by IEN - 10022 if you write the maker

**MULTI-PURPOSE ELECTRIC FURNACE**

TEMCO®

**SERIES 1500 . . . FOR GENERAL LAB WORK AND HEAT TREATING**

Ideal in the laboratory for ashing, ignitions, fusions, process control and general laboratory work. Use in the plant for hardening and tempering tools and dies and small unit production heat treating. Fast heating and can be operated continuously to 1650° F. and intermittently to 1900° F.

Equipped with indicating pyrometer and Temcometer stepless controller which automatically holds desired temperature unaffected by voltage fluctuations.

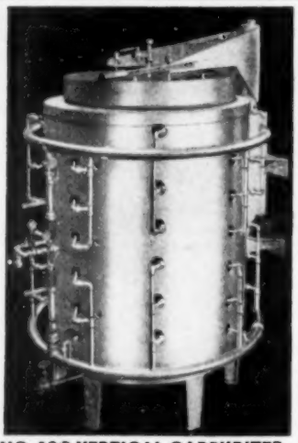
Welded steel case, 3" dual insulation, up-lifting counterbalanced door, 115 or 230 Volts, 60 cycles, Chamber sizes 4" wide, 3¾" high and 4½" or 9" deep. Priced from $92.50 to $112.50. Write for data and dealer's name.

THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa.

BREVITY—Identify by IEN - 10023 if you write the maker

**CLEAN**

CARBURIZING



of — BALLS, CUPS, SHAFTS, GEARS, RINGS, CONES, etc. with this

**AGF MODEL NO. 19C VERTICAL CARBURIZER.**

Developed by the PIONEERS, this well-built long life furnace may be used for "Ni-Carbing" and many other controlled atmosphere purposes. Ask for Bulletin No. 1214.

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

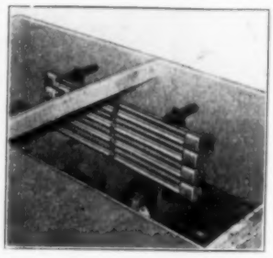
## NEWS NOTES—Continued

*"Booklets, catalogs, movies on grinding"*

BREVITY—Identify by IEN - 10024 if you write the maker

**DRYING . . Application of electric elements to dry motors and equipment submerged by a flood**

Edwin L. Wiegand Co.
7505 Thomas Blvd., Pittsburgh 8, Pa.



**Four "Chromalox"** radiant electric heating elements, employed in a plant to dry ink on cardboard, were employed in the emergency application illustrated which followed a flood. After drying out at low heat, the elements were installed in a temporary insulated plywood oven with a circulating fan. They were operated 24 hours per day to dry out 300 electric motors and other equipment in about 2 weeks. On completion of this operation, they were returned to their intended application prior to the flood.

BREVITY—Identify by IEN - 10025 if you write the maker

**GRINDING . . Available information summarized by folder which includes an order blank**

Norton Co.
36 New Bond St., Worcester 6, Mass.

**Sixteen booklets** of useful information on grinding, two catalogs on wheels and machines, eight 16-mm. Kodachrome sound motion pictures on "Lessons in Grinding", and the company's house publication "Grits and Grinds", all are summarized by new 4-page "Grinding Know-How" folder. An order blank carries an offer to supply information on a one-week training course, also available.

BREVITY—Identify by IEN - 10026 if you write the maker

**IMPREGNATING . . By means of vacuum the subject of new booklet on methods and equipment**

F. J. Stokes Machine Co.
5956 Tabor Road, Philadelphia 20, Pa.

**Basic principle** and applications of vacuum impregnation are described at the start of new 24-page Catalog 710. This is followed by a table of uses from Abrasives to Wood. Drawings show examples of equipment assemblies. A table lists standard components. Pictures show typical uses.

BREVITY—Identify by IEN - 10027 if you write the maker

**NICKEL ALLOYS . . Technical booklet on properties and uses of nickel-alloy cast iron**

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

**New 28-page** bulletin, "Guide to the Selection of Engineering Irons", is intended primarily for design engineers. It describes properties of nickel cast iron in detail including test data, specifications for typical applications, metallurgy.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 10028 if you write the maker

**THE EASY WAY TO TELL!**

Changeable Letter Bulletin Board
The message you want—when you want it!

**DAV-SON INDUSTRIAL BULLETIN BOARDS**

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

**Write for complete information regarding your requirements.**

DAV-SON A. C. DAVENPORT & SON, INC.
ESTABLISHED 1925
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY NEED

BREVITY—Identify by IEN - 10029 if you write the maker

**TASGON**

Tasgon saves time, money and temper. The quickest, most penetrating rust solvent on the market, Tasgon cuts through hardened paint, gummed-up grease, rust almost instantly. Quickly frees frozen nuts, bolts, couplings. Cleans and salvages old rusty equipment.

***Free Sample*** Write today for your free can of Tasgon and complete information. Once you've used it, you'll never be without it.

**Samuel Cabot, Inc.**
1033 Oliver Building Boston 9, Mass.

BREVITY—Identify by IEN - 10030 if you write the maker

**SPRA-LUBE**
*Lubricates the Overspray*

. . . each particle of paint is coated with a non-volatile solvent. And as it hits the water curtain, it can't stick to the back panel or any of the eliminators . . . The booth keeps clean and the sludge remains floating for easy skimming . . . The use of "SPRA-LUBE" guarantees lowest material and maintenance costs. Let our technicians consult you on this or any other cleaning problem—there are thirty-five specialized NORTHWEST products in this field alone.

BREVITY—Identify by IEN - 10031 if you write the maker

**We've Built a BETTER HANDLE!**

**FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!**

- non-rattling
- rugged construction
- rust-proof
- meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other Government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of Bendix AVIATION CORPORATION
1328 Taylor Avenue
Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

BREVITY—Identify by IEN - 10032 if you write the maker

OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

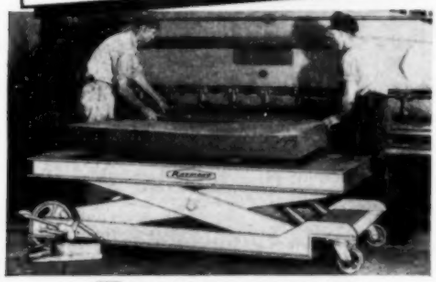
OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

**AMERICAN HAIR & FELT CO.**
Dept. X110, Merchandise Mart Chicago 54, Illinois

BREVITY—Identify by IEN - 10033 if you write the maker

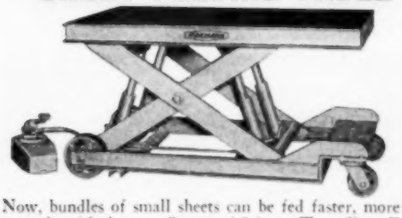
# NEW WAY to FEED Thick BUNDLES of SHEETS



**RAYMOND**

*Hydraulic Scissors-Type*

## SHEET FEEDING TABLE



Now, bundles of small sheets can be fed faster, more accurately with the new *Raymond* Scissors-Type Sheet Feeding Table.

Only 66" long, it has a scissors-type lifting mechanism that elevates the top from 18" to 36", enabling it to hold thick bundles for feeding. Top can't sag under off-center loads because it's supported at four points by Hydraulic rams.

With *Raymond* Scissors-Type Sheet Feeding Tables, manual lifting is banished — the operator merely slides sheets to presses, shears or brakes. Single speed foot pump or power operated pump raises table. Capacities: 6,000 or 10,000 lbs.

*FREE BULLETIN.* Send for Bulletin 261, Supp. 3—it gives complete details.

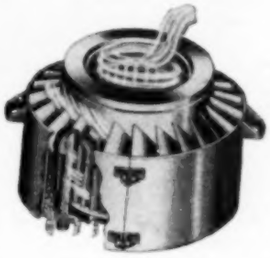
**RAYMOND**

*Formerly LYON-Raymond Corporation*
ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT
**The RAYMOND CORPORATION**
3555 SpaceMaker St., Greene, N. Y.

BREVITY—Identify by IEN - 10035 if you write the maker

## SEPARATING . . Steam purifier for boilers and processing equipment

Source: V. D. ANDERSON CO.
1931 W. 96th St., Cleveland 2, Ohio



**Hi-eF** designates a new separator to remove solid and liquid entrainment from steam prior to its exit from a pressure vessel such as a boiler or unit of steam-operated processing equipment. Assembly is above the water line by suspension in the steam space. The steam and entrained foreign matter enter a vane-equipped annular passage between the outer shell and the inner housing.

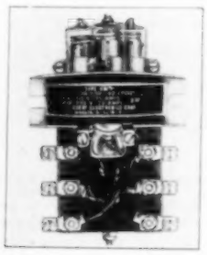
**Movement** is downward, the vanes setting up centrifugal action to produce initial separation. Further movement downward is linear at a reduced velocity so additional foreign matter can drop out. Final movement is inward through a second set of vanes to turn upward for exit through the center opening at the top. Foreign matter and moisture separate out to move downward through outlet connections at the bottom for discharge below water line. Steam issues with one ppm. or less of total solids.

**Sizes** range from 4 through 72 inches, those to 10 in. passing through a standard 10 by 16-in. or 11 by 15-in. elliptical manhole. Sizes from 12 to 36 in. are designed to enter through standard round manholes. Larger sizes to 72 in. are built for specified installation. The listed size refers to the pipe connection in the center of the outlet at the top of the unit. Overall diameter measured on the housing for the 4-in. size is 12⅝ in. and for the 10-in. size is 21¼ inches. Overall height in this range is from 7 to 12 inches.

BREVITY—Identify by IEN - 10036 if you write the maker

## RELAY . . Three pole mercury unit, magnetic action, 35 amp., 110 volt ac.

Source: EBERT ELECTRONICS CORP.
185-11 Jamaica Ave., Hollis 7, N. Y.



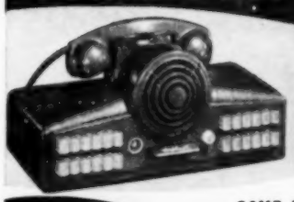
**Tungsten leads** terminate in a mercury-filled ceramic cup and also near the bottom of a sealed hydrogen-filled glass tube in each of the three contact elements in this new three-pole relay. The tube is partially filled with mercury on which a magnetic metal plunger is floated. Surrounding the three tubes is a solenoid coil for operation on 110-volt 60-cycle ac.

**When the coil** is energized, in the normally-open design, the plungers are drawn down into the mercury raising its level and making mercury-to-mercury contact at the ceramic cup. Designation is Type EM-7. Contact arrangement is available normally-open or normally-closed or a combination of the two. Overall dimensions are about 4 by 3 by 5½ inches.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10037 if you write the maker

# IT'S TIME TO ACT FAST!



talk business in 2 seconds

Reach Anyone Instantly

Boost Output

Cut Costs

SAVE TIME WITH
ELECTRONIC
**AMPLICALL**
INTERCOMMUNICATION

Gear up *now* for bigger output and increased efficiency. AMPLICALL provides 2-second speech contact between all departments for fast relay of orders and information. Stops wasteful walking and waiting — keeps plant and office personnel on the job every working minute — takes the load off busy switchboards. AMPLICALL *gets more work done for every operations dollar spent* — pays for itself quickly. Get the full details *today*.

SEE YOUR CLASSIFIED PHONE BOOK under "Intercommunication" for your AMPLICALL specialist, or write us direct

*Electronaering is our business*
SOUND EQUIPMENT **Rauland** INTER-COMMUNICATION
RAULAND-BORG CORPORATION • 3223-K ADDISON ST., CHICAGO 18, ILL.

BREVITY—Identify by IEN - 10038 if you write the maker

# CHROME PLATERS!

## TRY THESE NEW CORROSION RESISTANT HIGH CONDUCTION ELECTRO-CUPRALUM ANODES

These new Electro-Cupralum Anodes provide high, even electrical conductivity and the best in corrosion resistance. Electro-Cupralum Anodes are made with a copper core, homogeneously sealed in a lead jacket. The lead coating withstands corrosion action of the electrolyte while the copper provides excellent current conduction. Chemical bonding of the two metals prevents any current loss between the copper and lead. In addition, these copper core anodes are much stronger than ordinary lead anodes. Use of these Electro-Cupralum Anodes will result in more uniform deposits, shortened plating time, less current consumption and much longer anode life. These anodes are offered in a wide variety of shapes and forms, including tubular. Ask your Udylite Technical Man for detailed information, or write direct to:

PIONEER OF A BETTER WAY IN PLATING

**THE Udylite CORPORATION**
DETROIT 11, MICHIGAN

BREVITY—Identify by IEN - 10039 if you write the maker

## THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

**MADISON-KIPP CORP.**
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 10040 if you write the maker

# 8% Voltage Drop at 700% Inrush Current

with
**HEVI DUTY**
Control
Circuit
**TRANSFORMERS**

Exceptionally good regulation on high inrush current circuits is provided by compact Hevi Duty Control Circuit Transformers. These transformers are designed for control panel installation. Firmly anchored screw type terminals simplify wiring.

*Write for regulation curves and data.*

**HEVI DUTY ELECTRIC COMPANY**
HEAT TREATING FURNACES **HEVI-DUTY** ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 10041 if you write the maker

WRITE TODAY!

DICO'S WHEEL CATALOG Free!

A UNIQUE CATALOG SIMPLIFYING YOUR WHEEL ENGINEERING PROBLEMS

A MODERN LINE OF INDUSTRIAL RUBBER WHEELS DIAMETER 6"—18"

DICO CORPORATION
402 S.W. 16TH ST., DES MOINES 5, IOWA

BREVITY—Identify by IEN - 10042 if you write the maker

Announcing

Centr-A-Power SWITCHBOARDS

custom-built...
pre-engineered...at money-saving prices

Have us send you Bulletin TEB-3 which tells you how Trumbull's new CENTR-A-POWER can give you highest quality switchboard materials and construction at lowest possible cost.

Assembled from standardized interchangeable units and troughs with a minimum of engineering, CENTR-A-POWER provides a compact and flexible "center" for all your switching.

CENTR-A-POWER conveniences include greater capacity troughs—saving floor space; greater cross-section gutters—making wiring easier; quick-clip attachment of switch and breaker units—saving installation time.

Write now for Bulletin TEB-3 on CENTR-A-POWER.

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
Plainville, Connecticut

BREVITY—Identify by IEN - 10043 if you write the maker

Since 1887

MILWAUKEE WROT WASHERS

Better WASHERS ...Competitively Priced

Large volume production, the most advanced methods and facilities, plus more than 60 years of continuous experience in the manufacture of Washers, are factors that enable us to offer you top quality washers and stampings at competitive costs. Over 22,000 sets of dies for making Washers of every type (Standard and Special), from every type of material, for every purpose, in any finish. STAMPINGS of all descriptions; Blanking, Forming, Drawing.

*Submit your blueprints and quantity requirements for estimates.*

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2307 S. BAY ST., MILWAUKEE 7, WIS.

## NEWS NOTES—Continued

*"How to make press tools with matrix alloys"*

BREVITY—Identify by IEN - 10044 if you write the maker

**OIL CONDITIONING . . How-it-works description in bulletin on equipment to condition turbine oils**

Bowser Inc.
1338 Creighton Ave., Fort Wayne 2, Ind.

**Reasons** for conditioning turbine oil, how a clarifying assembly operates, typical equipment are presented in new 12-page Bulletin 832-P. A chart shows number of cycles necessary for maximum results and percentage of filterable contamination remaining after optimum is reached. Schematic flow diagrams accompany the text on equipment operation.

BREVITY—Identify by IEN - 10045 if you write the maker

**PLIERS . . Two new sound films on how pliers are made and how to use them**

Utica Drop Forge & Tool Co.
2413-17 Whitesboro St., Utica 4, N. Y.

**Two new** 16-mm. sound motion pictures are offered by the company on loan for group showing. The first, "Add Power to Your Hands", describes manufacture of pliers. The second, "Pliers: Their Care and Uses", tells how to select pliers for a given job and, how to use them. Running time is 10 min. each.

BREVITY—Identify by IEN - 10046 if you write the maker

**POLISHING . . File folder of information includes specific examples on polishing metal parts**

Behr-Manning Corp.
P. O. Box 808-A, Troy, N. Y.

**Six individual** folders are packaged in accessible arrangement inside new file folder, "Blueprints for Faster, Better Production". Each folder covers a specific example of work such as producing a radius on an inside edge, polishing a shaped contour, polishing the channel bottom of a die. Notes are included on the company's coated abrasives along with suggestions on machines and equipment to apply them.

BREVITY—Identify by IEN - 10047 if you write the maker

**PRESS TOOLS . . How to make them by casting hard parts in low-melting alloy**

Cerro de Pasco Corp.
40 Wall St., 31st Floor, New York 5, N. Y.

**Instructions** in new 20-page Manual A-15 describe how to use the company's "Cerromatrix" low-melting hard-setting expanding alloy to locate blanking, piercing and trimming punches in relation to dies. Drawings and text show how to secure punch and die parts, how lamination dies can be made, how to reclaim cracked dies.

BREVITY—Identify by IEN - 10048 if you write the maker

**RECORD KEEPING . . Booklet on Wage-Hour Law describes its provisions from record keeping standpoint**

Cincinnati Time Recorder Co.
1731-35 Central Ave., Cincinnati 14, Ohio

**High spots** in the Federal Wage-Hour Law are outlined in new 16-page booklet, "In the Dark about the New Wage-Hour Law?" It reviews the provisions as to scope, exemptions, overtime pay, special payments, special records, and emphasizes importance of keeping accurate records.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10049 if you write the maker

BARCOL

ELECTRIC OPERATORS FOR FACTORY GATES

Power-operated entrance gates to industrial plants are important for adequate protection and the proper control of traffic. The Barcol Electric Gate Operator, as illustrated above, is mounted in a weatherproof box at the side of the opening and attached by a chain at the correct points to insure smooth operation, with remote push-button control in the guardhouse. Barcol Operators are made for various types and sizes of such gates—let our representative give you the details.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

BREVITY—Identify by IEN - 10050 if you write the maker

A complete variable speed power plant in single unit

Combines motor, REEVES speed varying mechanism, and speed reducer in one, space-saving unit.

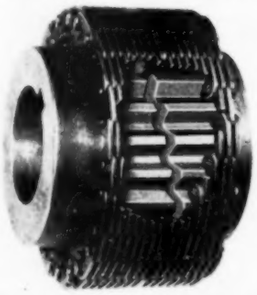
REEVES VARI-SPEED MOTODRIVE

To new machines or old, REEVES Vari-Speed Motodrive brings all the benefits of stepless speed adjustability. Available with any standard, constant-speed, foot-type motor—no special motors to stock. Horizontal and vertical models, 1 to 20 hp; 2:1 through 6:1 speed ratios; fractional hp sizes in speed ratios through 10:1; manual or automatic controls. Assures *positive, accurate* speed changes without stops—easily applied to machines in service—proved in 300,000 installations. Send for free catalog No. IN 72-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

BREVITY—Identify by IEN - 10051 if you write the maker

SPREADS THE STRAIN!



The RAMSEY "Diagonal" Flexible Coupling

Note how the steel pinions are cut diagonally to stagger the shear point of the chain pins and utilize the full width of the chain. This patented RAMSEY design gives greater strength to the assembly, assures longer life under greater loads! Easily installed, aligned, and disconnected. Available in ten sizes, from ½" bore, in capacities to 600 hp. Write today for literature giving dimensions, capacities, list prices.

SILENT CHAIN DRIVES — FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 10052 if you write the maker

couplings . . .
that assemble fast . . .
hold tight . . . seal positively

Joining tubes and ducts is usually accomplished with flanges requiring screws and bolts, or with threaded couplings. These are often difficult to assemble and disassemble, expensive to machine or undesirably heavy. Marman V-Band Couplings overcome all these objections. These carefully engineered devices employ positive clamping action around the joint with a quick acting screw takeup. They go on and off fast, are light in weight and require only a simple beaded or flanged end to provide a rigid high-strength seal.

Suitable flanges to accommodate a V-Band Coupling can be made integral with or added to the tubing or ducts to be joined. Rolled sheet metal flanges or machined flanges are equally adaptable. The joint can be used with or without a gasket.

*Our catalog tells more . . . just write Dept. 1-10*

MARMAN PRODUCTS CO. INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 10053 if you write the maker

You Get BOTH . . .
Practical Design,
Heat-Resistant Cowhide in

**AO LEGGINGS**

PROTECTIVE CLOTHING

Here's protection that can help reduce the 225,000 leg injuries including burns which occur in industry each year. AO leggings and spats are expertly designed from selected materials. Your nearest AO Safety Products Representative can supply you.

**AO 1512 LEGGING**

A spring type legging that gives real value in protection and comfort. No adjustment necessary . . . easily put on and removed . . . fits securely at ankle and below knee.

For same legging in asbestos ask for AO 1481; in flame-resistant duck, AO 1482.

**AO 7X160CL LEGGING**

This popular legging of chrome-tanned cowhide leather protects lower leg, ankle, instep. Its popularity comes from its unusual design and features. Spring clip on instep holds flare in position. Has three positions at top of legging and two positions at ankle for steel stay, permitting snug fit and immediate release.

For same legging in asbestos ask for AO 7X160A; in flame resistant duck AO 7X160FR.

American Optical
SAFETY PRODUCTS DIVISION

*Southbridge, Massachusetts • Branches in Principal Cities*

BREVITY—Identify by IEN - 10054 if you write the maker

**SAVE up to 70% with**
**Aluminum Alloy "UP-RIGHT" SCAFFOLDS**

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB

*30' Mobile*
**TOWER SCAFFOLD**
which took only 10 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

*Mobile 6', 8' or 10'*
**SPAN SCAFFOLDS**
"The only way to get over looms and spinning frames", reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.

**ROLL-AROUND and SAFETY CAGE**
Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

**WRITE FOR DESCRIPTIVE CIRCULAR**

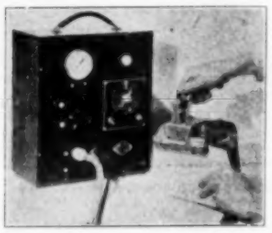
**"UPRIGHT" SCAFFOLDS**
DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.
FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

BREVITY—Identify by IEN - 10056 if you write the maker

## PACKAGING . . Heat sealing machine, air operated, electrically controlled

**Source:** PACKAGING INDUSTRIES
48-52 Church St., Dept. 71, Montclair, N. J.



**Model 6A** and Model 6AD are two new heat-sealing machines consisting of a hand tool with jaws 6 in. in length and a control housing into which air and electric connections are plugged for the tool. PInuMatic Heat Sealer is the designation. Application can be made on all types of thermoplastic coated and laminated packaging materials including seal foil and other barrier materials. A seal can be made satisfactorily over splices and wrinkles and through contamination. The sealed material will not delaminate in service.

**The hand tool** is made of cast aluminum, mounts an on-off switch, an adjustable thermostat, a pilot light, a trigger switch and one heated jaw in Model 6A. The other jaw is faced with silicone rubber. Model 6AD is identical with Model 6A except that the tool is equipped with two heated jaws. In both cases the heated jaws are thermostatically controlled and adjustable for temperature to 500 deg. F.

**Control panel** mounts an on-off switch with circuit connections for a 110-volt 60-cycle ac. power source. It includes an air-pressure regulator and a gage to read pressure on the air-operated jaw. An electric timer is included for heating-interval control from a fraction of a second to 15 seconds. There is also provision to regulate air pressure. Plug-in outlets for hand tool and foot control complete this unit, which measures 12¼ by 6½ by 14 in. and weighs 19 pounds. Control can be centered at the hand tool or at a foot switch with which the operator initiates a sealing cycle.

BREVITY—Identify by IEN - 10057 if you write the maker

## TESTING . . Heat indicating paint changes color at set temperatures

**Source:** TEMPIL CORP.
132 W. 22nd St., 3rd Floor, New York 11, N. Y.

Ask for free
4 ounce sample
naming type

**Temp-Alarm** trade names a new temperature - sensitive paint which, after being allowed to dry to a firm coat in an interval between 24 and 48 hour, markedly changes color on being heated for a few minutes to a given temperature. The material has the characteristics of a good outdoor paint and can be applied directly to a grease-free base metal or over the usual priming coats or another paint coat. Application is by brushing or spraying. The material, as supplied, is the right consistency for brushing. It requires thinning to spray in which case the company supplies a special thinner.

**Five types** are included in the line, two of which are originally gray, one is buff, one is mustard and one is green. The gray materials change to maroon at 180 deg. F. and 200 deg. F. respectively. The buff material changes to red at 250 deg. F. The mustard paint changes to maroon at 400 deg. F. The green paint changes to black at 400 deg. F. and to a red brown at 900 deg. F. List price for the gray paint is $25 per gallon. It is $40 per gallon for the other three.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10058 if you write the maker

**INDUSTRIAL TRUCKS**
*. . . how to tell when they are*

Busy?
Idle?
Lifting?
Engine Running?

PUT ON
**Servis Recorders**

A couple of screws or bolts does the job. Then the truck *itself writes its own story!*

Standing
Traveling, etc.

**THE CHART**
Wax covered, no ink or pencil needed; a sapphire stylus marks the record—a picture of the day's work at a glance.

**SERVIS RECORDER**—closed. Just bolted on—no connection with any moving part.

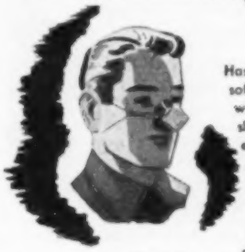
Write for Bulletin IT

THE SERVICE RECORDER COMPANY
1375 Euclid Avenue • Cleveland 15, Ohio

BREVITY—Identify by IEN - 10059 if you write the maker

**BE FRESH . .**
**STAY FRESH**

*Wear a*
***Dupor no. 1***
miniature NOSE MASK for Dust, Fumes, Paint Spray



Has 9 sq. in. filter. Mask is of soft rubber equipped with nose wire that's adjustable to any shape nose. Exhalation valve exhausts breathed air and keeps out unfiltered air. Handy as a pair of glasses. Complete panorama vision, no blind spots. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz.

*Sample sent* $1.20 *pp*

**H. S. COVER,** South Bend, Ind.

BREVITY—Identify by IEN - 10060 if you write the maker

**Whatever your sanding problem**
*. . . on wood, metal, plastic*

**. . . there's a SUNDSTRAND**
**Straight-Line Action Air Sander to solve it!**

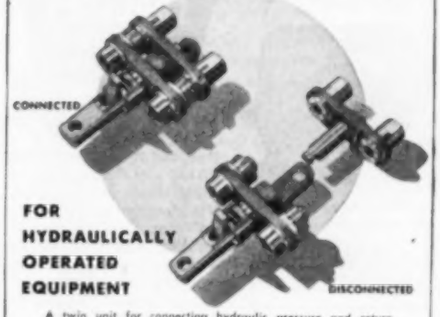
No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Ask for bulletin IE-10.

SUNDSTRAND

**SUNDSTRAND AIR SANDERS**
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 10061 if you write the maker

**Aeroquip**
**"BREAKAWAY" COUPLING**




**FOR HYDRAULICALLY OPERATED EQUIPMENT**

A twin unit for connecting hydraulic pressure and return lines on equipment requiring frequent connection and disconnection. A tug on the hose lines or tripping the trigger disconnects the coupling. Both halves automatically seal, keeping hydraulic fluid in and preventing dirt and air from entering system. Easily connected even when under pressure. Available in ½ inch female pipe thread size.

**AEROQUIP CORPORATION**
JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

BREVITY—Identify by IEN - 10062 if you write the maker

Symbol GRIGOLEIT OF QUALITY AND ECONOMY IN MOLDED PLASTICS

BRUSH HOLDER CAP
Screw-top caps to secure brush spring in motor.

SHIPPING CLOSURES
Protects threads from dirt and damage. Made to order in various sizes.

Defense work invited on molded plastics; have facilities for small metal part fabrication or sub-assembly.

*Your Key to Sales Success is* molded plastics by Grigoleit . . . the symbol of quality and economy. A complete line of Pulls, Knobs, Pendants and threaded specialties ready for prompt delivery. Write for your copy of the full illustrated catalog today.

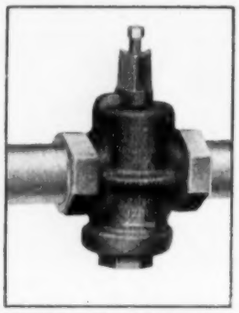
THE GRIGOLEIT COMPANY
"Over Twenty Years on Plastics"
742 E. NORTH ST. DECATUR, ILLINOIS

BREVITY—Identify by IEN - 10063 if you write the maker

Homestead-Reiser
Self-Seald
LUBRICATED PLUG VALVES

*The Full-Port-Area Valve built to outlast all other lubricated plug valves in the 200-lb. working pressure class.*

- 100% PORT AREA
- 100% LUBRICANT SEAL AROUND PORTS
- SELF-SEALING
- AUTOMATIC ADJUSTMENT FOR WEAR
- EXTREME ECONOMY OF LUBRICANT



*Remains drop-tight for Up to 22 TIMES more operations without Re-lubrication*

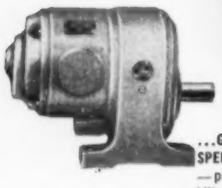
Self-seald MEANS in addition to a full-port lubricant seal, the wedge action of the plug under pressure forces plug surfaces outward against seating surfaces of body, keeping them always in contact. Plug automatically adjusts for wear, assuring long life, leakless service, and lubricant economy.

HOMESTEAD VALVE MANUFACTURING CO.
P. O. Box 85 Serving Since 1892 Coraopolis, Pa.

BREVITY—Identify by IEN - 10064 if you write the maker

power modernization
...for increased industrial efficiency

requires correct production speed



STERLING
SLO-SPEED
...GIVES YOU THE ONE BEST SLOW SPEED AND gives uninterrupted service — provides versatile mounting and flexibility in arrangement of machinery — is rugged—saves valuable space—provides greater safety — costs less to install and use. An indispensable source of slow speed power for:

| | | |
|---|---|---|
| Agitators | Dryers | Presses |
| Blenders | Feeders | Pumps |
| Blowers | Kilns | Screens |
| Conveyors | Mills | Tumblers |
| Cookers | Mixers | Etc., etc., etc. |

*Ask for your copy of* pictorial bulletin No. K-82 showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

## NEWS NOTES—Concluded

*"Maintenance suggestions on lift trucks"*

BREVITY—Identify by IEN - 10065 if you write the maker

**RUBBER PRODUCTS . . New application of neoprene in paper making now being tested**

E. I. du Pont de Nemours & Co.
2518 Nemours Bldg., Wilmington 98, Del.

**Latex form** of neoprene is added direct to pulp just before it is made into paper. Resulting paper has wet strength, chemical resistance, improved physical properties. Applications now under development include gasket paper, filter paper, abrasion-resistant washable summer rugs.

BREVITY—Identify by IEN - 10066 if you write the maker

**TECHNICAL WRITING . . Editorial service to prepare technical publications on electronic equipment**

Radio Corp. of America
1941 Front & Cooper Sts., Camden 2, N. J.

**Company announces** that the facilities of its Government Service Division now are available to electronic equipment contractors and military agencies for preparation of instruction books, technical manuals, training aids, special reports and presentations. Personnel includes writers, editors, draftsmen, artists, printers. Details are given in new 12-page bulletin, "Operation Techmanual", available on request.

BREVITY—Identify by IEN - 10067 if you write the maker

**TESTING . . Instruction manual on gas analysis by means of Orsat equipment**

Fisher Scientific Co.
719 Forbes St., Pittsburgh 19, Pa.

**Fourth Edition** is announced for the company's "Gas-Analysis Manual", written by Maryan P. Matuszak. The 60-page book gives directions for assembling Orsat-type gas-analysis equipment, instructions for operation, equipment available in the company's line, suggestions on care and maintenance. It is available to qualified individuals.

BREVITY—Identify by IEN - 10068 if you write the maker

**TRANSFORMERS . . New experimental design employs fluorocarbon vapor cooling and insulation**

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

**Weight** of new experimental vaporization-cooled transformer is one-quarter to one-third less than that of a liquid-immersed unit of equivalent rating. Liquid fluorocarbon is sprayed on the core and coils so that heat transfer is by vaporization at much better efficiency than by circulating oil. The fluorocarbon is non-flammable.

BREVITY—Identify by IEN - 10069 if you write the maker

**TRUCKS . . Pictures show maintenance steps in manual on the care of industrial power lift trucks**

Baker-Raulang Co.
1248-52 W. 80th St., Cleveland 2, Ohio

**Bulletin 2100** uses pictures and captions to present a weekly list of 24 points and an annual list of 27 points to check on a power lift truck. The pictures are large, mostly four to a page. Captions are concise, give reasons why when there might be doubt about a procedure. Title of the 16-page bulletin is "Care and Maintenance of Industrial Trucks".

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10070 if you write the maker

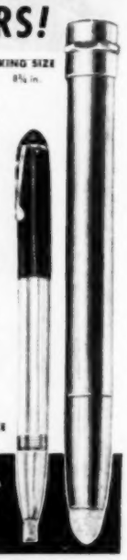
In OUR Plant we mark parts in COLORS!

Yes, in *colors* for easier assembling, stocking, identification, etc. And industry is finding the Flo-master Felt-Tip Marker ideal for *all* types of marking. Its felt tip glides over any surface—metal, plastic, wood, etc. with broad, bold lines or fine lines. Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

Drawn with a FLO-MASTER

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 W. 23rd St., N.Y. 11




Flo-master
FELT-TIP MARKER

BREVITY—Identify by IEN - 10071 if you write the maker

AMES HAS THE BETTER ANSWER to your Long Range Problem

MODEL NO. 2822

Ames Long Range Dial Indicators are doing a better job on those difficult quality control jobs which require long range close tolerance inspection. Problems such as those involving measurement of slide motions, cam travel, or checking the depth of recesses and penetrations are easily and accurately solved with Ames Long Range Dial Indicators. Models are available having ranges from ½" to 12". Some dials graduated in .001", some in .0005". Other models graduated in .0001". Write for detailed information or send your problem to Ames Engineering Department. There is an Ames Gauge or Indicator to solve practically any measuring problem controlling quality of process or product.

Representatives in principal cities. B. C. AMES CO. 11 Ames Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

BREVITY—Identify by IEN - 10072 if you write the maker

handling experts everywhere are talking about the

Look at these features of the new TOWMOTOR:
• Extra heavy duty frame • Drop forge beam steering axle • Functionally styled cowl • Full vision instrument panel • Precision controls in easy reach • Super-strength forks • Maximum free lift • Engineered tire equipment • Double universal joint • Precision mast construction • Maximum operating comfort • Heavy duty hydraulic brakes • One piece drive axle assembly • Heavy, industrial-type engines

TOWMOTOR CORPORATION, Div. 26
1226 E. 152nd St., Cleveland 10, Ohio

TOWMOTOR THE ONE MAN GANG

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

BREVITY—Identify by IEN - 10073 if you write the maker

Accurate Torque Measurements

. . . without Heavy Dynamometer and Scale Equipment!

Baldwin SR-4® Torquemeter

Small, precise, rugged. Consists of short length of shaft with SR-4® strain gages bonded to it, plus slip rings and housing. Translates torsional stress into electrical energy for indicating, recording, control or limiting instruments. Available in eight standard ranges: 0-100, 0-200, 0-500, 0-1000, 0-2000, 0-5000, 0-12,000, 0-30,000 in. lbs. Calibration inaccuracy not more than ±¼% of full range in either direction at any point from 0% to 100% capacity. For full dimensional and operational details ask for Bulletin 328.

BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pennsylvania
In Canada: Peacock Bros. Ltd., Montreal, Quebec

BREVITY—Identify by IEN - 10074 if you write the maker

Just because gravy goes swell over noodles, he shouldn't assume it's good on hair, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

**OIL CUPS permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little*.**

Gits oil cups have been the standard for industry for more than 40 years. Gits Bros. has the largest selection of oil cups available anywhere. Call on Gits Bros. for a prompt, efficient solution to your lubrication problems.

***Write for free Price Guide Catalog***

**GITS BROS. MFG. CO.**

**1854 S. Kilbourn Ave. • Chicago 23, Ill.**

BREVITY—Identify by IEN - 10075 if you write the maker

# introducing

## the Coffing COIL CHAIN SAFETY-PULL RATCHET LEVER HOIST

The Model R is now available in 1,500- and 3,000-lb. capacities — other sizes will follow.

***Advanced Guard for a New, Advanced Line***

**Here is a completely new ratchet lever hoist designed to bring you added safety and convenience. The Model R incorporates the time-proved ratchet and pawl principle originated by Coffing — makes it hold positively at all times — no friction-type brake to slip or freeze — chain is free wheeling when not under load.**

## Many New Advantages

**COIL CHAIN** Swings or wraps in any direction for greater flexibility in use.

**SIX OPERATING POSITIONS** Handle operates in any position, works on full or partial strokes — for ease of handling in close quarters. Safety stops prevent spinning of handle.

**SAFETY FACTOR OF FIVE** All hoist load-holding parts designed to withstand pull equal to five times rated capacity. Each hoist also factory tested at 100 percent overload. "Safety-valve" handle bends at point of maximum safe overload.

**SIMPLE TO SERVICE** The Model R may be completely disassembled with only a screwdriver for easy servicing. Not necessary to return it to the factory for repairs.

Find out more about the hoist that gives you greater convenience and safety in all lifting, pulling, stretching. Write for bulletin P108

**COFFING HOIST COMPANY**
**Danville, Illinois**

Quik-Lift Electric Hoists • Hoist-Alls • Mighty-Midget Pullers
Spur-Geared Hoists • Differential Chain Hoists • Load Binders
I-Beam Trolleys

***Sold by Industrial Distributors everywhere***

BREVITY—Identify by IEN - 10077 if you write the maker

## VENTILATING . . Power exhauster discharges bad air, fumes through roof

**Source: CHICAGO BLOWER CORP.**
**4556-60 W. Congress St., Chicago 24, Ill.**

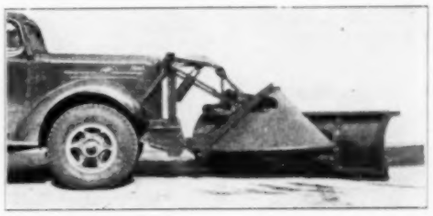
**Guide vanes** have been added to the company's motor-driven Gyra-Flo exhauster, previously described IEN-2665-50, with location at selected intervals around the vertical blower impeller. The vanes shear the air from the impeller so this air enters the atmosphere without turbulence. The motor-driven assembly is otherwise essentially the same as in the previous description. Air capacities range from 830 to 29,750 cfm. in a number of sizes. Static pressure is from ⅛ to ¾ inch. Noise level is 61 to 88 decibels.

**New air deflector** is welded to the inside in this new design to the right in the illustration of the company's Axial-Flo exhauster, previously described IEN 2847-50. The deflector splits and directs the flow of air to the outside. The fan-type impeller mounts blades that can be adjusted to a desired pitch to cover a range of operating requirements. Drive is by a ball-bearing motor with direct or belt connection. Vibration eliminators support the operating assembly. Impeller diameter ranges from 14 to 48 in. for air capacities from 870 to 47,800 cfm. Static pressure is ⅛ to 1½ inches.

BREVITY—Identify by IEN - 10078 if you write the maker

## SNOW PLOW . . Mounts on truck to clear streets, runways, parking areas

**Source: FRINK SNO-PLOWS INC.**
**209-225 Webb St., Clayton, N. Y.**



**Four angles** can be set between 15 and 42 deg. to the right or left, in addition to straight ahead, in this new adjustable and reversible snow plow for operation by a 1½ to 10-ton truck. Three sizes include moldboards measuring 24, 30 and 36 in. in height, without a deflector, by 10 and 11 ft. in length. Weight of the plow alone ranges from 1,350 to 1,475 pounds.

**Construction** includes spring-backed release in the event that the moldboard meets a solid obstruction with return to plowing position as soon as the obstruction is cleared. Also the blade is free to oscillate laterally in a limited amount so it can follow a street contour without throwing a strain on the truck chassis. The moldboard is adjustable to positions for plowing and for scraping.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10079 if you write the maker

## High Production Milling *Saves Labor... Cuts Costs*

For *high production with precision*—put the work on Kent-Owens Milling Machines! They're designed for rapid, easy set-up and operation. Rugged . . . with twin-post head mounting that assures balanced load—no chattering. Practical features throughout to help you *produce more . . . save labor* . . . and *reduce costs!* Write for bulletin. Kent-Owens Machine Co., Toledo, Ohio.

**No. 2-20 Milling Machine**
**Table, 42" x 12"**
**Table travel, 20"**

# KENT-OWENS
*Milling Machines*

BREVITY—Identify by IEN - 10080 if you write the maker

# *Fill'er Fuller Faster*

## *New Hansen Tacker Feature ...*

**NOT** a moment is wasted reloading a Hansen Tacker. Simply hook spring over catch, insert a strip of staples, replace spring in operating position. This feature speeds reloading and prevents spring damage. Learn about **other** Hansen features. **REQUEST BOOKLET.**

**A. L. HANSEN MFG. CO.** 5051 Ravenswood Ave. Chicago 40, Ill.

HANSEN **ONE-HAND *Hansen* TACKERS**

BREVITY—Identify by IEN - 10081 if you write the maker

Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE® MIMEOGRAPH MIMEOTYPE

**NEW** A. B. DICK MIMEOGRAPHS

black-on-white **COPIES** or colored copies of anything typed, written or drawn

produced **FAST** on most all paper and card stocks at speeds ranging up to 180 copies per minute.

and **EASY** on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

**WRITE TODAY for full details**

**A B DICK COMPANY**
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products

BREVITY—Identify by IEN - 10082 if you write the maker

**HIGH EFFICIENCY**

# DUST CONTROL

**with DUCLONE COLLECTORS**

- Because each DUCLONE COLLECTOR is tailor-made for specific use . . . in proper balance — in shape, size of clone and vortex — in relation to air velocity.
- Because scientifically designed and built to eliminate all destructive eddy currents and resistance to centrifugal action.
- Because only DUCLONE is equipped with inlet control and adjustable vortex shield to give highest performance efficiency.
- Expertly engineered . . . simple and sturdy construction . . . assure long, continuous, heavy duty service.
- *A DUCON engineer will gladly confer with you on any dust problem.*

**Write for descriptive, illustrated catalog DC49-1.**

**The DUCON Co.**
**MINEOLA, N. Y.**

BREVITY—Identify by IEN - 10083 if you write the maker

# TUF-STUF'S best proving ground is in the air!

## It pays to specify TUF-STUF aluminum bronze alloys for parts that must stand up

Because they are both light and tough, TUF-STUF aluminum bronze alloys have proven invaluable in America's aircraft as valve-seat inserts, spark plug inserts, valve guides, gears and other vital parts.

If your product requires machined parts that are strong but light, resistant to corrosion, long wearing and resistant to oxidation even at high temperatures, then TUF-STUF is the right alloy for the job.

TUF-STUF alloys are furnished in the form of forgings, rods and screw machine parts. They fill Federal Specification QQ-B-666, Grade B, and several other variations. Because of the increased use and demand for both aluminum and copper, jobs carrying a Defense Order Number are receiving first consideration. 58

**MUELLER BRASS CO., PORT HURON 27, MICH.**

BREVITY—Identify by IEN - 10084 if you write the maker

**GENERAL BOX COMPANY . .**

★★★★★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc., Houston, Dallas. General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 10085 if you write the maker

# Better FIRE PROTECTION BEGINS WITH ROCKWOOD PRODUCTS

Get the best all-around fire fighting tool available — Rockwood triple-action SG-48 WaterFOG Nozzle. A truly all-purpose nozzle that extinguishes and controls fires in flammable liquids and ordinary combustibles with plain water. Protects operator from fumes and heat. Discharges high velocity WaterFOG, straight stream and low velocity WaterFOG. Available for service on fire hose lines in ¾" — 1" — 1½" and 2½" sizes. Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

*Write for complete information and prices on Rockwood's growing family of portable fire fighting products.*

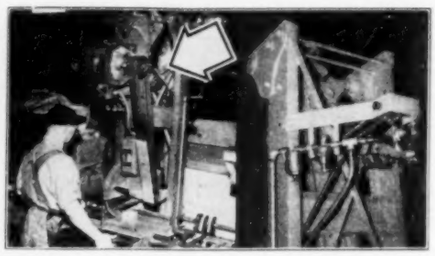
**ROCKWOOD SPRINKLER COMPANY**
40 HARLOW STREET* WORCESTER 5, MASS.

Portable Fire Protection Division . . .

BREVITY—Identify by IEN - 10086 if you write the maker

## SAWING . . Pneumatic attachment feeds and retracts company's swing saw

Source: HESTON & ANDERSON DIVISION
610 Kirkwood Ave., Fairfield, Iowa

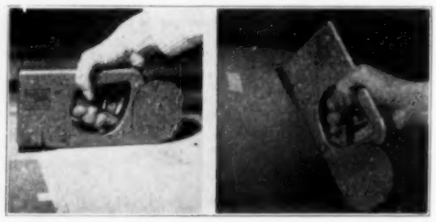


**Control** centers at a pushbutton or lever at the operator's position following application of this new air-operated swing-saw feed attachment on the company's sawing machine. Air pressure is applied in a cylinder mounted back of the machine frame near the top to swing the saw forward through the work and to stop and retract it from a predetermined forward position. The saw moves through a single cycle, then stops until the button has been released and pressed again. Application can be made on equipment now in service. New swing-saw machines can be ordered to include it.

BREVITY—Identify by IEN - 10087 if you write the maker

## DISPENSING . . Hand operated tool delivers, attaches, cuts adhesive tape

Source: TRIG-A-TAPE CORP.
117-04 New York Blvd., Jamaica 5, N. Y.



**Tape sections** 1 in. in length are delivered from a roll ¾ in. in width held in the housing of this new hand tool each time a hand-grip trigger is depressed to the limit of its travel. At the same time the tool serves to apply this short piece on a flat or curved surface so it is in adhered position when the cut-off knife shears through it.

**List price** is $13.75. A box of six rolls of white paper self-adhesive tape is available from the company at $1.40 per box in rolls measuring 306 in. in tape length. Single rolls measuring 792 in. or 1,296 in. of cellophane tape lists at about 80 cents and $1.12 each.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

FIND WHAT YOU WANT?
Try the index on page 118 to help locate it

BREVITY—Identify by IEN - 10088 if you write the maker

*You've got the "Number" on Abrasive Dusts when You Use* TORIT

## DUST SEPARATORS

Here you are folks. Step right up and watch the sparks and dust go 'round and 'round. Off the wheel they fly, but not into machinist's eyes.

You hold the winning number when dust-creating machines are equipped with Torit Dust Separators. Compact and powerful, they trap dust at its source. Heavy particles are removed by centrifugal action and, with after-filter as shown, the remainder is cleaned to permit recirculation of the air. Keep production spinning with Torit dust collecting equipment. There are models and sizes for every standard machine. For complete information and latest Torit catalog, write:

**TORIT Manufacturing Co.**
286 Walnut St., St. Paul 2, Minn.

BREVITY—Identify by IEN - 10089 if you write the maker

*There's nothing to compare with it!*

# CM CYCLONE

LIGHT WEIGHT—HEAVY DUTY
*High Speed* CHAIN HOIST

**63% Less Weight**: Of Alcoa Aluminum Alloy, the 1 ton capacity weighs only 35 lbs. Carry it anywhere with ease. Designed to stand the "gaff" of maintenance work. **42% Fewer Parts**: Long service life. **96% Efficient**: Lifts loads rapidly with easier pull on the chain. ***Herc-Alloy Flexible Load Chain***: America's first welded alloy steel chain. ***Sealed-in Lifetime Lubrication***: No attention required. **Low Cost**: No more than heavy old style chain hoists. Capacities: ¼ to 10 tons.

*Write for* BULLETIN 145A or phone your local CM Distributor for a demonstration.

**CHISHOLM-MOORE HOIST CORPORATION**
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York, Chicago and Cleveland • Distributors Everywhere

BREVITY—Identify by IEN - 10090 if you write the maker

**REED ENGINEERING COMPANY** — MODERN METALWORKING MACHINES

1009 W. Fairview — Carthage, Mo.

BENDING ROLLS ★ WELDING POSITIONERS & ROLLS ★ OFFSET & CONTOUR FORMERS ★ ASSEMBLY FIXTURES

## WELL, NO— WE'VE NEVER HAD A CHANCE TO QUOTE ON ONE—YET, BUT . . .

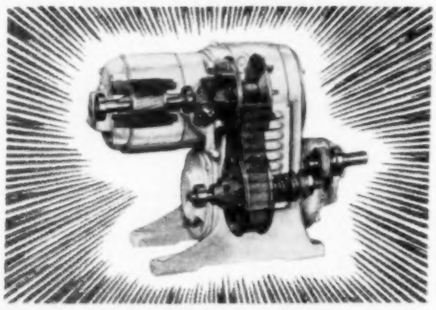
IT'S LIKE THIS—WE MAKE A GOOD LINE OF STANDARD MACHINES, AND WE'RE PROUD OF THEM, BUT—WE'RE STILL INTERESTED IN DESIGNING AND BUILDING MACHINES TO DO THINGS THAT HAVEN'T BEEN DONE BEFORE, OR TO IMPROVE UPON THE EXISTING METHODS. WE'RE PREPARED TO COMPETE WITH YOUR OWN TOOLING DEPARTMENT AND GUARANTEE RESULTS.

*WRITE FOR BULLETIN 77*

★ SPECIAL MACHINES & FIXTURES ★

BREVITY—Identify by IEN - 10091 if you write the maker

# Miracle MOTOR STEPS UP PRODUCTION!



## VARIDRIVE 2 TO 10,000 RPM

Varidrive will give your powered equipment any and every speed needed right up or down to a split rpm. No external gearing. Simply turn the control handle for instant speed selection. Increase production 10%, 20%, 30% or more. ¼ to 50 h.p. Ask for new U.S. Varidrive Bulletin.

**U.S. ELECTRICAL MOTORS, Inc.**
Box 2058, Los Angeles 54, Calif. or Milford, Conn.

BREVITY—Identify by IEN - 10092 if you write the maker

For Faster Assemblies use a

# "YANKEE"

*Quick-Return* Spiral Screw Driver

A push on the handle and the screw is off to a spinning start! Up with the arm and the driver is ready for the next push. Constant spring pressure keeps the bit in the screw slot. This quick-return feature of the "Yankee" Spiral Screw Driver helps one hand do the work of two, easier and faster.

*Ask your Industrial Supply Distributor about these and other "Yankee" Tools that put an extra push into every job.*

**Write today for the "Yankee" Tool Book**

Quick-Return Style Nos. 130A, 131A, 135
Standard Style (without Quick Return Spring). Nos. 30A, 31A, 35

"YANKEE" TOOLS NOW PART OF STANLEY THE TOOL BOX OF THE WORLD

**NORTH BROS. MFG. CO.**
**Philadelphia 33, Pa.**

BREVITY—Identify by IEN - 10093 if you write the maker

# WHAT WOULD YOU SPECIFY

| Fluid | Concentration | Temp. | Type of Valve | Valve Material |
|---|---|---|---|---|
| 1 Sulphuric Acid | 20% | 120 F. | | |
| 2 Sulphuric Acid | 100% | 180 F. | | |
| 3 Hydrochloric Acid | 33% | 80 F. | | |
| 4 Hydrofluoric Acid | 50% | 125 F. | | |
| 5 Beer | | 200 F. | | |
| 6 Oxygen | | Ambient | | |

**We supplied Grinnell-Saunders Diaphragm Valves with . . .**

| Body Material | Diaphragm Material |
|---|---|
| 1 Rubber lined | Natural rubber |
| 2 Cast iron | KEL-F |
| 3 Glass lined | Butyl |
| 4 Magnesium | KEL-F |
| 5 Polished bronze | White diaphragm |
| 6 Cast iron* | Neoprene |

*For oxygen service a high flash point lubricant is supplied. All valves for oxygen service are subjected to 300 lb. air underwater test.

In several of these cases other body materials or diaphragms might serve. Really important is the versatility of Grinnell-Saunders Diaphragm Valves in handling corrosive fluids, gases, compressed air, food, suspended solids . . . where corrosion, abrasion, contamination, clogging, leakage, maintenance are problems.

Grinnell-Saunders Valve bodies are stocked in cast iron, malleable iron, stainless steel, bronze, and aluminum, with other materials available on special order. Valve bodies can be lined with lead, glass, natural rubber or neoprene. Diaphragms are available of natural rubber and a number of synthetics to suit particular service conditions.

**Features of the Grinnell-Saunders Diaphragm Valve**

* diaphragm absolutely isolates working parts from fluid * diaphragm lifts high for streamlined flow in either direction * diaphragm presses tight for positive closure * body, lining and diaphragm materials to suit service * simple maintenance — diaphragm easily replaced.

**GRINNELL**
WHENEVER PIPING IS INVOLVED

**Grinnell Company, Inc., Executive Offices, Providence, R. I.**
Sales Offices and Warehouses in Principal Cities

BREVITY—Identify by IEN - 10095 if you write the maker

## FURNITURE . . Steel office chairs in six models, four colors available

**Source: HAMILTON MFG. CORP.**
**1501-5 Cottage Ave., Columbus, Ind.**

**The three views** in the illustration show Model 16-S in the company's new line of tubular-steel office chairs. The line includes a second Model 16 with fixed rather than adjustable back assembly, two models in a Series 17, one plain and one with arm rests and two models in a Series 20 in non-swivel design, one with arm rests and one plain. The revolving designs employ a drawn-steel saddle-shaped seat that turns on an oil-impregnated bushing and provides seat adjustment between 16 and 20 in. above the floor.

**Upholstery** is Du Pont Fabrillite with 1 in. of foam-rubber latex cushioning. The back is upholstered in the same material over padded Tufflex. Four upholstery colors are gray, green, brown or maroon. The metal parts are finished in gray, green or brown baked enamel. Casters in the Series 16 and Series 17 are equipped with soft-rubber wheels, 2 in. in diameter assembled on roller bearings with a ball-bearing swivel. List prices range from about $24 to $44.

BREVITY—Identify by IEN - 10096 if you write the maker

## COMMUNICATING . . Two-way radio reports production from shop to office

**Source: MOTOROLA INC.**
**4543-47 W. Augusta Blvd., Chicago 51, Ill.**

**New application** of the company's Handie-Talkie portable radio-phone, previously described IEN-7610-50, provides a means to report current production data on the machines in a plant to a central control office. Records in this office are based upon the reports to supply immediate data on the status of any contract going through the shop. In the installation pictured, records are reported and kept on 2,000 products.

**The operator** at the portable end of the installation goes from machine to machine checking operations and reporting to the control center. Operators in the central control office use the reported figures to keep the production control board up to date. At the same time one of the two operators, seated at the control desk, regulates an audio control board over which production conferences can be held.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10097 if you write the maker

**Now available . . . . CARBIDE CUTTING TOOLS, the first authoritative text book on carbides, designed to inform the student, the designer and the man at the machine.**

"KNOW HOW"—the best productive use of manpower, machines and materials is essential in our present emergency. It is with this in mind that V-R is making this book available.

CONTENTS: Machine Tools and the Carbides. Converting to Carbides. Tool Angles. Machinability. Tipping a Carbide Tool. Grinding Single-Point Tools. Cutting Power, Speeds, Feeds. Carbide Tool Design. Contants and Carbide Tools. Carbide Forming Tools. Carbide Milling Cutters. Sharpening Milling Cutters. Multiple-Edge Carbide Tools. Cutting Speeds, Feeds, Forces. Multiple-Edge Tool Design. Selection of a Carbide. Tool Materials. Assembly. Grinding and Use of Tools. Index.

*416 Pages, 283 Illus. Washable Cloth Binding. Price $5.50*

Companies' purchase orders will be subject to our regular terms. Book orders from individuals should be accompanied by check or money order. Please do not send cash because we will not be responsible. All books shipped prepaid. Offer limited to U. S. and Canada. United States funds only.

**FREE** . . . With each book purchased for your training program, a complete study guide specially prepared for V-R by the American Technical Society will be furnished without charge—compliments of Vascoloy-Ramet Corporation.

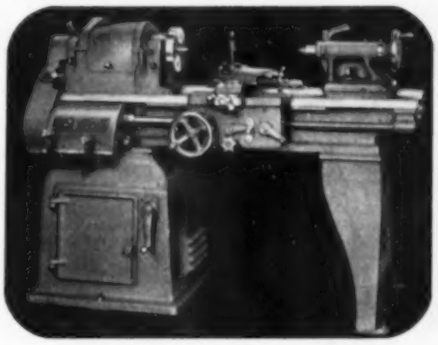
Send all Book Orders to: VASCOLOY-RAMET CORPORATION, EDUCATIONAL DEPARTMENT

**VASCOLOY-RAMET CORPORATION**
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 10098 if you write the maker

# SOUTH BEND

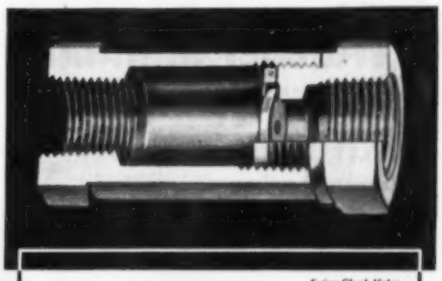
## 14½" LATHES FOR FAST PRECISION MACHINING



South Bend 14-1/2" Lathes hold down machining costs on work that requires extreme accuracy. They are fast and easy to operate . . . and readily adaptable to a wide variety of jobs. *Write for Catalog.*

**SOUTH BEND LATHE**
*Building Better Tools Since 1906 • South Bend 22, Indiana*

BREVITY—Identify by IEN - 10099 if you write the maker



Swing Check Valve

# KOHLER PRECISION PARTS

**Aircraft • Industrial • Automotive**

Kohler is a leading supplier of precision parts, and will develop valves and fittings for volume production to meet special applications. Send your specifications or request a catalog.

Kohler Co., Kohler, Wisconsin. Established 1873.

**KOHLER OF KOHLER**
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

BREVITY—Identify by IEN - 10100 if you write the maker

## Michigan Machine Shop

# SAVES $700 ON BRONZE BAR STOCK

*in just one year!*

**DIRECT shipments of N-B-M "Tiger" Bronze reduce this customer's costs 35%**

*Thirty cents per pound* . . . that's what a Michigan Machine Shop saved by ordering "Tiger" Bronze direct from National Bearing Division. And, *overnight shipment of their orders is assured by strategically located warehouses.*

These low prices are made possible by direct-to-you shipments . . . NOT by any sacrifice in quality, because the quality of N-B-M "Tiger" Bronze is high! It's anti-frictional to insure longer wear, and has physical properties that permit it to resist shocks, yet embed foreign particles.

15" lengths of "Tiger" Bronze are available in all popular sizes and bar types . . . cored, solid, and hexagon. Order a trial supply of "Tiger" Bronze today . . . you'll get better bearing service and save money!

***Quotations and free catalog on request.***

AMERICAN Brake Shoe COMPANY — **NATIONAL BEARING DIVISION**
4930 Manchester Avenue • St. Louis 10, Mo.
PLANTS IN: ST. LOUIS, MO. • MEADVILLE, PA. • NILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

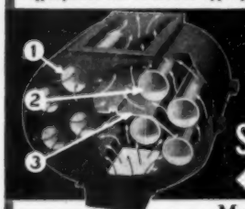
BREVITY—Identify by IEN - 10101 if you write the maker

**Ingersoll** STEEL DIVISION
BORG-WARNER CORPORATION
NEW CASTLE, INDIANA

BREVITY—Identify by IEN - 10102 if you write the maker

# Mueller Climatrol

space-saving
**gas-fired unit heaters**
(propeller fan or blower types)




*Proof of* SUPERIORITY is here

1. One-piece all-welded steel heat exchanger — no tie-rod, bolted, gasketed, or slip joints to leak, separate or crack.
2. Uniform air flow and heat distribution — burner extends under entire heat exchanger; insures maximum fuel economy.
3. High Crown Sheet — no flame impingement, no hot spots.

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. E-44

Write for full details —

**L. J. Mueller Furnace Co.**
2040-L W. Oklahoma Ave.
MILWAUKEE 15, WISCONSIN

BREVITY—Identify by IEN - 10103 if you write the maker

**S.S.WHITE ELASTOPLASTIC ALEMITE FITTING CAPS**

They're FLEXIBLE
- *Easy on*
- *Easy off*
- *Stay put*

These inexpensive plastic caps prevent dirt from lodging on the tips of alemite fittings and being forced into the bearing when the grease gun is applied.

They're ideal for dirty or gritty operations. They're long lasting, retain their flexibility and are unaffected by oil, grease or gasoline.

Sizes for button head, zerk or hydraulic and 1/8" dot type fittings. For details and prices,

WRITE FOR BULLETIN P-5103

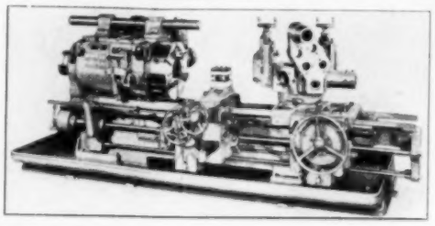
THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept HP 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

BREVITY—Identify by IEN - 10104 if you write the maker

## LATHE . . Saddle type turret design to machine 9 in. and 12 in. bar stock

Source: WARNER & SWASEY CO.
5703 Carnegie Ave., Dept. IEN, Cleveland 3, Ohio



**The company** announces design improvements in its Model-A heavy-duty saddle-type turret lathe, one size for round bar stock to 9 in. and in a second size for bar stock to 12 inches. The 9-in. machine will turn 51 in. in length. The 12-in. machine will handle 48 inches. Chuck capacity is 24 and 28 inches. Swing over the carriage horn is a little over 22 in. in both machines. Maximum distance from the end of the spindle to the face of the hexagon turret is 68⅜ in. in one machine, 65⅞ in. in the other.

**Improvements** include a new hydraulically-actuated lever-controlled clutch-and-brake mechanism for forward, stop and reverse. There is no neutral or intermediate delay position, as in the previous design. The rapid-traverse shaft has been moved to the front of the machine and traverse is now provided for both longitudinal and cross motions with drive by a separate 3-hp. motor mounted on the back of the headstock. This same motor drives the coolant, hydraulic and lubricant pumps. Electrical controls are centralized.

**New bar-feed attachment** is hydraulically operated with control at a lever mounted on the carriage stop-rod bracket. The power-chuck wrench-control lever has been replaced with a pistol-grip unit employing a trigger-interlocked release. Standard tooling can be applied on the new machine.

**Spindle speeds** total 12 in a high-speed range between 16 and 424 rpm. on one machine and 12 to 315 rpm. on the other. Low speed ranges and a second high-speed range employing a two-speed motor can be specified. Cross travel is through 17 in. with 16 cross feeds between 0.0031 and 0.1025 inch. Longitudinal travel is through 54 in. approximately with 16 longitudinal feeds from 0.005 to 0.167 inch. A similar number of longitudinal feeds in the same feed range applies for the turret with power rapid traverse at 36 fpm.

BREVITY—Identify by IEN - 10105 if you write the maker

## CLEANING . . Liquid concentrate for emulsion use in washing machines

Source: DU BOIS CO.
1118-22 W. Front St., Cincinnati 3, Ohio

Safe to use on most metals

**Super-Mul** is a new liquid material for use in spray-washing machines and also for wipe-down maintenance cleaning as well as for rust control in rinsing stages of washers and to pre-wet before alkaline or flush cleaning. One gallon of the liquid is added to 100 gal. of water for light shop soil, or in heavier concentrations for more difficult work. Best temperature is 140 to 160 deg. F. The solvent is used straight for pre-soaking or wiping down. Flash point is high for fire safety. The material is non-toxic, has no disagreeable odor.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10106 if you write the maker

*ask for*
**DANLY**
*precision*
**DOWEL PINS**

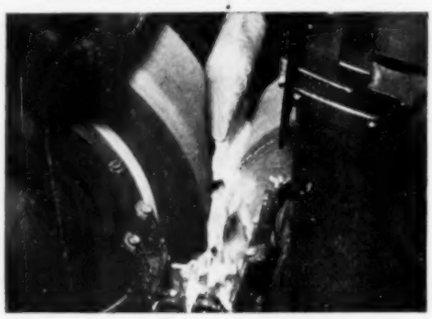
Drive easier because tapered leading ends "pilot" Danly Dowel Pins into close fitting holes . . . resist upsetting because they're specially hardened (58 to 60 Rockwell C) . . . meet almost every requirement with two complete size ranges, one standard and one ground .001 oversize for enlarged holes.

*Send for this free bulletin for helpful application data and catalog information.*

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois

PRECISION DIE SETS . . . DIEMAKERS' SUPPLIES

BREVITY—Identify by IEN - 10107 if you write the maker



**Production on centerless grinder**

## Multiplied 5 times per wheel dressing

Worried about increasing production?

Here's what one manufacturer who was grinding cotter-pin rivets from drop forgings did. Because he was getting only 25 rivets per wheel dressing while removing 1/4" stock on a plunge cut, he called in a Robertson engineer. After studying the problem, the engineer recommended a Robertson SA54-QV wheel. Production immediately increased to 125 rivets per wheel-dressing—an increase of 400 percent.

No matter what materials you are working on, Robertson grinding wheels are designed to give you a combination of high production, quality finish and low cost. Blueprint your problem and let us recommend a wheel.

**ROBERTSON** MANUFACTURING CO. TRENTON, NEW JERSEY

RESIN-BONDED AND VITRIFIED-BONDED GRINDING WHEELS • MOUNTED WHEELS • SEGMENTS

BREVITY—Identify by IEN - 10108 if you write the maker

# NEW MIDGET CHUCK*

*For ANGLE or SNAKE DRILLING*

Now in production is this amazing, practical, NEW RITMAR CHUCK. SAVES MONEY . . . REDUCES INVENTORY INVESTMENT. TRY SOME and CONVINCE YOURSELF!

*Actual Size!*

*Pat. Pending

- ✓ POSITIVE GRIP . . . LESS DRILL BREAKAGE
- ✓ LESS TRIPS TO THE TOOL CRIB
- ✓ USES BROKEN DRILLS or DRILLS with Short Shank
- ✓ NO MORE SPECIAL DRILLS . . . NO MORE BRAZING

AVAILABLE in DRILL SIZES from a No. 6 to No. 50. FOR DRIVING UNITS with 10/32, 1/4—28, 5/16—24 threads.

For further detailed information, write or wire

**RITMAR CO.**
Designers & Manufacturers of Special Tools
183 New York Ave., Huntington, L.I., N.Y. Huntington 7135

BREVITY—Identify by IEN - 10109 if you write the maker

*SPEEDY sez:*
**"SPEEDWAYS low cost CONVEYORS GO TO WORK in a HURRY!"**

*SPEEDWAYS Gravity Wheel Conveyors* — light, sturdy, portable — quickly taken down, moved, set up where needed—without tools. Handle up to 600 lbs. distributed load.

*SPEEDWAYS Gravity Roller Conveyors* —best for "hard-to-handle" items like kegs, baskets, milk cans. Handle loads wider than conveyor. Mounted on stands or casters.

*SPEEDBELT Portable Power "Boosters"* — for loading, unloading, stacking, etc. Hand crank for quick, easy height adjustment. Three sizes.

**FREE**—Helpful bulletin "How to Order Correct Size Conveyor." Also full information on SPEEDWAYS models. Write us today.

**SPEEDWAYS Conveyors, Inc.**
1244 Niagara St., Buffalo 13, N. Y.
Also Mfd. in Canada; Union of So. Africa

BREVITY—Identify by IEN - 10110 if you write the maker

# QUICK ACTION
## ON ANY ORDER

BREVITY—Identify by IEN - 10111 if you write the maker

# CALCULAGRAPH

**figures elapsed time accurately**

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

**Write for full information today, to Dept. B.**

**CALCULAGRAPH COMPANY**
SUSSEX STREET, HARRISON, NEW JERSEY

BREVITY—Identify by IEN - 10113 if you write the maker

## MOTOR . . Miniature shaded pole for louver control, valves, display

Source: ACRO MFG. CO.
2041 E. Main St., Columbus 16, Ohio

**Model AD** is new assembly of the company's miniature shaded-pole motor to include the rotor, stator, gear train and 24-volt transformer in an aluminum die-cast housing. The output shaft measures 0.257 in. in diameter and is available in various lengths. The design permits continuous stall.

**Four types** operate in one direction with no control circuit, in one direction with a two-wire start-and-stop control, in two-wire and three-wire reversible control. Standard speeds are 2, 7½ and 27 rpm.

**The rotor** is mounted on ball bearings. Lubricant is colloidal graphite grease sealed in for the life of the motor. Overall dimensions over the housing are 1¾ by 3¾ by 5 inches. A single unit lists at $15 for 110-volt 60-cycle ac.

BREVITY—Identify by IEN - 10114 if you write the maker

## STRAPPING . . Corrugated strap for expanding, contracting enclosures

Source: A. J. GERRARD & CO.
1948-52 N. Hawthorne Ave., Melrose Park, Ill.

**Four page bulletin illustrates and describes**

**Expand-R-Strap** is a new stainless-steel strap made in 320-ft. coils with each alternating 5 ft. corrugated and 5 ft. plain. Each corrugated section provides for ¼ in. of expansion. Strap width is ¾ inch. Thickness is 0.022 inch.

**Application** around a tank, or other vessel subject to expansion and contraction, is by means of tools the company is prepared to supply. One foot of the strap that has been tensioned to 13 in. will apply 85 lb. of tension loading. In this condition a secondary stretch of ¼-in. is available to compensate for thermal expansion.

BREVITY—Identify by IEN - 10115 if you write the maker

## GAGE . . Flexible steel rule, 6 ft. length, chromium finished case

Source: MASTER RULE MFG. CO.
38-42 Mulberry St., Dept. E, Middletown, N. Y.

**List price** is $1.50 for this new Monitor 206A 6-ft. steel rule. The blade measures ⅝ in. in width, carries graduations on the two edges, off-set printed in chemical and weather-proof ink, and then etched. The blade bends without kinking for measurements around curved surfaces. Weight is 2 ounces.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 10116 if you write the maker

BREVITY—Identify by IEN - 10117 if you write the maker

# Yes! It's Hot Now

## BUT IT'S HIGH TIME TO INSTALL EFFICIENT "Buffalo" UNIT HEATERS

**BREEZO-FIN UNIT HEATER**

• If you didn't have adequate, trouble-free heating last winter, RIGHT NOW is the time to write for all details on "Buffalo" Unit Heaters. Compact BREEZO-FIN Heaters operate efficiently on 2 to 100 lbs. steam pressure. Adjustable louvers. Rugged, efficient "Buffalo" Breezo Fan mounted behind coils "shoots" heat just where you need it. 20 sizes. WRITE FOR BULLETIN NOW!

**BUFFALO FORGE COMPANY**
496 Broadway, Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all Principal Cities

**"Buffalo" UNIT HEATERS**

BREVITY—Identify by IEN - 10118 if you write the maker

# UNIVERSAL
## EXPANDED METAL FLOOR TRUCKS

MODEL 4-A
Length 60", width 30", height 30".

• Greater Economy
• Greater Utility

*Literature Mailed Promptly Upon Request*

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

• Also other types of expanded metal containers in sizes and quantites to customer's specifications.

**INDUSTRIAL ENGINEERING & MFG. CO., INC.**
SHIPPIFLD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 10119 if you write the maker

# NEW SLIDE CHART

**gives you information on**
• BENDING RADII
• COIL DIAMETERS
**for Stainless Tubing and Pipe from ⅛" to 5" O.D.**

*Just write a note on your company letterhead and we will send your copy of this useful Carpenter Stainless Tubing Slide Chart.*

THE CARPENTER STEEL COMPANY
Alloy Tube Division Union, New Jersey

BREVITY—Identify by IEN - 10120 if you write the maker

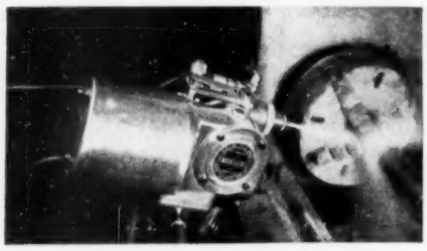
Productimeters for every counting job can be built into your machines. This metered accuracy is desired and an added sales feature — so important to those who know that Productimeter control means increased profits.

**DURANT MANUFACTURING CO.**
1930 N. Buffum Street, Milwaukee 1, Wisconsin
130 Orange Street, Providence 3, R. I.
Representatives in Principal Cities

Send for Catalog No. 100

**PRODUCTIMETERS** SINCE 1879 *Count Everything*

BREVITY—Identify by IEN - 10121 if you write the maker



## Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Moguelectric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Moguelectric Gun.

*Write for new booklet containing complete information on equipment as well as production and maintenance applications.*

**METALLIZING COMPANY OF AMERICA**
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 10122 if you write the maker

**SUPERIOR'S NEW BULLETIN No. P550**

Here's complete, up-to-date information on Explosion-proof POWERSTATS . . . plus the complete line of Superior variable voltage control equipment. A colorful 16-page bulletin illustrating product and application information, rating charts, circuit diagrams and dimensions.

WRITE TODAY FOR FREE ENGINEERING BULLETIN

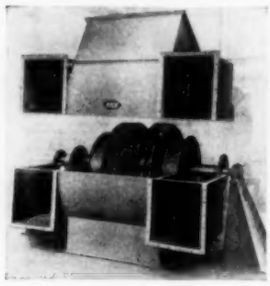
**THE SUPERIOR ELECTRIC CO.**
1210 CHURCH STREET, BRISTOL, CONNECTICUT

NAME _____
COMPANY _____
CO. ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 10123 if you write the maker

## BLOWER . . Double inlet centrifugal for forced draft, to 40 in. of water

Source: PRAT-DANIEL CORP.
82-86 S. Water St., East Port Chester, Conn.



**Duplicate impellers** are mounted back to back with a space between their inner faces in this new double-width, double-inlet forced-draft blower. Inlet openings to the impellers register with inlet cones for smooth air flow. The separated units deliver the air in a position so it can diffuse laterally and prevent any heavy concentration at the center. Each assembly is made to given specifications.

**Impeller diameters** range from 20 to 78 inches. General information is presented and illustrated in 8-page bulletin 300. The bulletin does not include dimensions or specifications which will be supplied on request for bid on equipment to meet given conditions in an installation.

BREVITY—Identify by IEN - 10124 if you write the maker

## SWITCH . . Attenuator design, twelve units, ¼ amp. at 110 volts

Source: SHALLCROSS MFG. CO.
8-12 Jackson Ave., Collingdale, Pa.

**Silver contacts,** wiper arms and collector rings are standard construction in the company's new line of round single-desk attenuator switches. Construction includes twelve units in one and two-pole types with a maximum of 60 contact positions. Rotating arc is from 144 to 360 degrees for the switch travel.

**Average resistance** through the contacts is 0.003 ohms for service life of a million operations or more. A detent mechanism can be specified. Most of the types can be ganged by using a square switch plate slightly larger on a side than the specified diameter of the standard round plate.

BREVITY—Identify by IEN - 10125 if you write the maker

**CHEMICALS . . Booklet on caustic soda includes information on handling, storage, technical data**

Pennsylvania Salt Mfg. Co.
1002 Widener Bldg., Philadelphia 7, Pa.

**How to select** the suitable form of caustic soda, safety precautions in unloading flake and liquid forms, materials of construction for storage equipment, technical data on the chemical are included in new 24-page booklet, "Caustic Soda."

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10126 if you write the maker

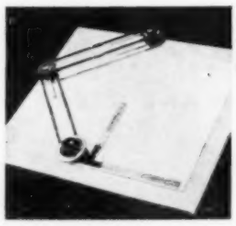
## *industrial* OIL AND GAS BURNING EQUIPMENT

- Mechanical Atomizing Oil Burners
- Steam Atomizing Oil Burners
- Refractory Burner and Muffle Blocks
- Industrial Gas Burners
- Low Air Pressure Oil Burners
- Fuel Oil Pump Sets
- Valves, Strainers, Furnace Windows
- Tandem Block Combustion Units
- Combination Gas and Oil Burners

Detailed information gladly sent you upon request.

**NATIONAL AIROIL BURNER COMPANY, INC.**
1281 EAST SEDGLEY AVENUE, PHILADELPHIA 34, PA.
Southwestern Division: 2512 SOUTH BOULEVARD, HOUSTON 6, TEXAS

BREVITY—Identify by IEN - 10127 if you write the maker



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This precise instrument, without which no drawing board is complete, combines into one accurate unit most of the loose tools of the drafting art — T-square, protractor, triangles, scales and parallel rules. It speeds all classes of work, improves its quality, and lessens operator fatigue.

This improved drafting machine in your plant will speed ideas to the blueprint stage — will cut engineering costs — will improve drafting room efficiency. Write for descriptive bulletin outlining the many exclusive features that have made Universal Boardmaster the favorite drafting machine of American industry.

**UNIVERSAL DRAFTING MACHINE CORPORATION**
7960 Lorain Avenue • Cleveland 2, Ohio

**UNIVERSAL** DRAFTING MACHINE DURALINE SCALES

BREVITY—Identify by IEN - 10128 if you write the maker

## the miracle-worker!

**GPX**—Georgia-Pacific's plastic-faced plywood, is performing production miracles . . . GPX versatility is apparent as new applications of this unique product are discovered.

**GPX** combines the strength and durability of plywood and the armor-hard surface properties of plastic. The plastic overlay is applied under heat and pressure at the time the plywood is being bonded. Result: the plastic flows, condenses and sets, forming a hard plastic surface that *is part of the plywood itself.*

**GPX** is incomparable for concrete forms . . . GPX has made the revolutionary Unicel box car a reality . . . GPX's flawless surface and its resistance to heat makes it superior to other materials for foundry match plates.
GPX is the perfect material for tables, counters, and most work surfaces.

The GPX Use Folder will aid you in determining where Georgia-Pacific's GPX can solve your construction and production problems.
Send for this booklet and see what miracles GPX can perform for you.

**GEORGIA—PACIFIC** PLYWOOD COMPANY

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Columbia, Louisville, Memphis, Nashville, Newark, Olympia, Orlando, Philadelphia, Pittsburgh, Portland, Raleigh, Richmond, Savannah.

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*Plastic Plywood Division*
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Please send me the GPX Use Folder.

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CITY _____ STATE _____
POSITION _____

BREVITY—Identify by IEN - 10130 if you write the maker

# RAILS AND TRACK ACCESSORIES

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog IE-7

STEEL SHEET PILING • PIPE • WIRE ROPE

**L.B. FOSTER CO.**

PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.




BREVITY—Identify by IEN - 10131 if you write the maker

## TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY ELECTRIC

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

**WRITE FOR COMPLETE INFORMATION**

**ELECTRIC WHEEL CO.**

2814 SPRUCE · QUINCY, ILLINOIS

BREVITY—Identify by IEN - 10132 if you write the maker

# HOW TO WELD CONTACTS

**Fast, Easy, Economical Small Part Assembly with RAYTHEON WELDPOWER* UNITS**

Showing a few of the infinite ways dissimilar metals are successfully joined by Raytheon Weldpower Units. The new Model G. Weldpower Head provides precise control and ready adaptability that makes possible high speed, low cost production assembly of small parts.

*Write for complete information. Address Dept. IN-10*

Raytheon Condenser Weldpower Control Units for Model G. Weldpower Heads are available in 65, 225, 1080 watt-second capacities.

* Reg. U. S. Pat. Off.

*Excellence in* RAYTHEON *Electronics*

**RAYTHEON MANUFACTURING COMPANY**

Waltham 54, Massachusetts

BREVITY—Identify by IEN - 10133 if you write the maker

## BENDING . . Pyramid bending roll forms steel pipe for welding operation

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.

**Five changes** have been made, following initial design of the company's Pyramid Type bending roll that is employed to form 31½-ft. lengths of 78 and 97-in. skelp into 24 and 30-in. pipe sections ready for welding.

**All three rolls** are now driven by a 100-hp. motor for a rolling speed to 60 fpm. A two-speed differential drive is provided for the screw-down, with high speed at 30 ipm., to position the 20-in. top roll and low speed to 12 ipm. to apply increasing bending pressure. Maximum clearance between the rolls is 6 inches. The screw-down is driven by a 100-hp. motor.

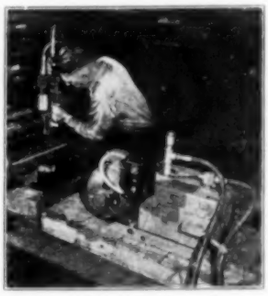
**Bottom roll centers** can be varied from 18 to 24 in. by a third motor drive. This adjusting movement is accompanied in outward direction by decreasing load on the top roll for a given plate so roll deflection can be controlled to present a comparatively straight surface to the plate and avoid "barrel effect".

**Accessibility** at the top end is improved by locating the drop-end hydraulic cylinder in horizontal position. Drop-end housing motion is by use of the hydraulic cylinder through a lever assembly and double quadrant. The mechanism automatically locks the end in operating position without requiring **lock pins and permits remote actuation from the operator's** platform. Drive gears are enclosed in oil-tight housings.

BREVITY—Identify by IEN - 10134 if you write the maker

## RIVETING . . Portable hydraulic tool has capacity for a ⅝ in. cold rivet

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.



**C-shaped head** to take riveting tools replaces the shearing head in the company's portable hydraulic tool, previously described IEN-4913-51, to provide a portable tool that will drive rivets cold to ⅝ in. in diameter. The head connects by hose to the motor or engine-driven power unit, also previously developed for use with the power shear. This unit employs a 2-hp. electric motor or a comparable gasoline engine. Thrust on the piston in the head is rated at 30 ton.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10135 if you write the maker

# HERE'S THE FULL STORY

## of LOW COST HIGH EFFICIENCY filtration with Titeflex

Regardless of what you filter you'll find this booklet of interest. It contains full details of how Titeflex filters can reduce your filtering costs by (1) saving time and (2) saving materials. Shows entire cycle of operation graphically and lists sizes and capacities of various models. If you filter *anything* it will pay you to get this information.

SEND FOR YOUR FREE COPY TODAY

**TITEFLEX, INC.**

506 Frelinghuysen Avenue Newark 5, N. J.

BREVITY—Identify by IEN - 10136 if you write the maker

**Tell Us Your Production Problems . . . We'll Help You Solve Them**

# "LOGAN" Rotating and Nonrotating AIR CYLINDERS

*Fast-Acting, Positive Controlled Power . . At LOW COST*

**NONROTATING—7 STANDARD MOUNTING TYPES**

Standard sizes from 1½" to 12" bore; maximum stroke, 18 feet. Special models to meet your requirements.

Logan features — Larger Ports . . . More Sturdy Construction . . . Maximum Power Without Leakage . . . Permanent Seal Around Piston Rod . . . Standard Models Available With or Without Cushioning.

**ROTATING—**

Two Standard Styles — Model R with cast iron body, Model K with lightweight aluminum body.

Bore diameter 1½" to 20"; piston stroke 1" to 2"; longer strokes available as special. American Standard adaptations; simple, efficient design to assure positive, rapid, economical operation.

**Logan Manufactures 6,975 Standard Cataloged Items**

Free Catalog On Request

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- COLLET GRIP TUBE FITTINGS — CATALOG 66
- HYDRAULIC CONTROL VALVES — CATALOG 300-4
- HYDRAULIC CYLINDERS — CATALOG 200-3; ALSO 00-3
- HYDRAULIC POWER UNITS — CATALOG 300-1
- SURE-FLOW COOLANT PUMPS — CATALOG 65

Let Logan Engineers help you design your Air and Hydraulic Circuits.

**Logan** Air and Hydraulic Equipment

LOGANSPORT MACHINE CO. INC. 813 Center Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

BREVITY—Identify by IEN - 10137 if you write the maker

# machine designers

*this informative engineering handbook can help you!*

If you design lift trucks, hoists, counterweight suspensions, controls, or any type of equipment where you must transmit pull or lift, this informative, free engineering handbook on tension linkages will help you!

Send for your free copy today. Just fill in and mail the coupon below. There is no obligation.

**BALDWIN-REX** ROLLER CHAINS

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Springfield 2, Mass.

Send me my copy of your Bulletin on Tension Linkages.

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COMPANY.....DEPT.....

ADDRESS.....

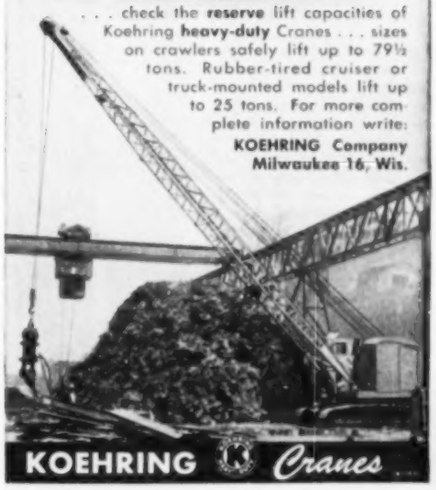
CITY.....STATE.....

BREVITY—Identify by IEN - 10138 if you write the maker

# For BIGGER DAILY TONNAGE

. . . check the **reserve** lift capacities of Koehring **heavy-duty** Cranes . . . sizes on crawlers safely lift up to 79½ tons. Rubber-tired cruiser or truck-mounted models lift up to 25 tons. For more complete information write:

**KOEHRING Company**
**Milwaukee 16, Wis.**



**KOEHRING Cranes**

BREVITY—Identify by IEN - 10139 if you write the maker

The Really Rugged Bar Iron Truck You've been waiting for!

Heavy duty for bars, tubes and angles.

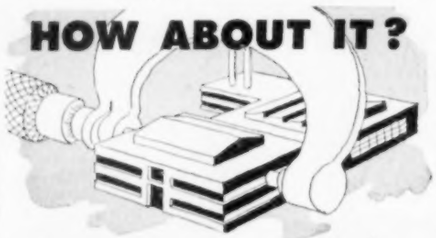
LANSING COMPANY

TRUCKS · BARROWS · CARTS
TRAILERS · CASTERS · SKIDS

"Keep Your Products on Wheels"
Main Office and Factory: LANSING, MICH.

BREVITY—Identify by IEN - 10140 if you write the maker

HOW ABOUT IT?



is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

Send for important Doyle Vac-It information today. There's no obligation.

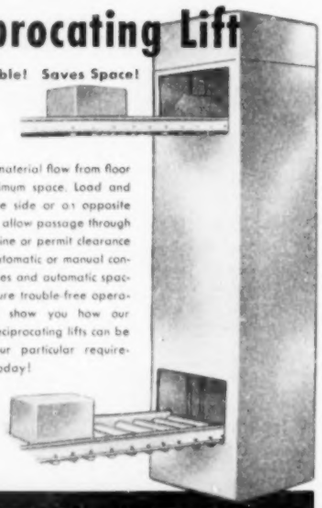
Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

BREVITY—Identify by IEN - 10141 if you write the maker

Reciprocating Lift

New! Flexible! Saves Space!



Now speed material flow from floor to floor in minimum space. Load and unload on same side or on opposite sides. Two units allow passage through your conveyor line or permit clearance of obstacles. Automatic or manual control. Limit switches and automatic spacing devices assure trouble-free operation. May we show you how our standardized reciprocating lifts can be applied to your particular requirements. Write today!

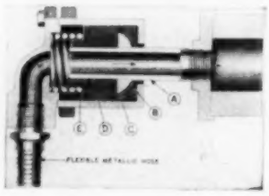
CONVEYOR SPECIALTY COMPANY, INC.
35 Newport Avenue, North Quincy 71, Mass.

Belt Conveyors · Slat Conveyors · Gravity Conveyors · Press Conveyors · "Unitable" Belt Conveyor · Unipac Handler (Portable Pile) · Complete Package Handling Systems

BREVITY—Identify by IEN - 10142 if you write the maker

## PIPE FITTING . . Rotary joint to make stationary-rotating connection

Source: JOHNSON CORP.
805 Wood St., Three Rivers, Mich.



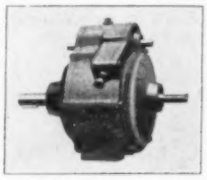

**Pressure rating** is now 250 lb. as compared to 150 lb. in the company's Type-S rotary pipe joint previously described IEN-6466-48. The new units are available in sizes from ¾ to 3 in. for through-flow or for siphon-type duty. Standard construction employs a cast-iron head and body with a steel nipple. Bronze trim, bronze body and nipple, or all-bronze with a stainless-steel spring can be specified.

**The nipple** A extending to the right of the housing threads into the rotating connection, carries a graphite seal ring B inside the housing to bear against the shoulder C which is part of the nipple. Back of this shoulder, filling the housing and riding around the nipple, is a graphite guide D. To its left is the spring E. This spring provides initial sealing pressure until pressure of the medium carried in the joint takes over the sealing function.

BREVITY—Identify by IEN - 10143 if you write the maker

## DRIVE . . Planetary transmission with band clutches for reversing duty

Source: SNOW-NABSTEDT GEAR CORP.
250 Welton St., Hamden, Conn.



**Rating** is 2 to 12 hp. depending on input speed in this new transmission. Maximum input torque is 324 in. lb., and reduction ratio in either direction is 3.75 to 1. The transmission is engaged for drive in selected direction by operating a lever secured to a shaft near the top of the housing. This lever releases and engages one or the other of two band clutches. External adjustment is provided for each.

**Overall dimensions** are about 9 by 8 by 9½ inches. The input shaft is ¾ in. in diameter. The output shaft measures 1 inch. Overall length between the shaft ends is a little under 13 inches. Lever movement for forward and reverse drive is 30 deg. on each side of vertical neutral position. The unit is known as Reduction Clutch No. 5107.

BREVITY—Identify by IEN - 10144 if you write the maker

## BATTERIES . . Instruction booklet on storage-battery operation and maintenance

Gould-National Batteries Inc.
465-69 Calhoun St., Trenton 7, N. J.

**Third Edition** of the company's "Battery Technology Handbook" contains a new 6-page section on battery charging. The 56-page pocket-size booklet describes theory of the lead-acid storage battery, instructions on care and operation, maintenance repairs, parts and tools. Tables list capacities and charging-rate settings.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10145 if you write the maker

WHAT PRICE Quality?

Series 1600 "ground" precision radial bearings.

NICE BALL BEARINGS

Series 600 low cost "unground" thrust bearings.

"Low cost" bearings can be "high quality" bearings. Quality is relative — a comparative measure of dollar value, and can be built into the most inexpensive product.

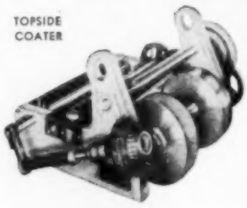
The Nice Line ranges from close tolerance, precision "ground" ball bearings to low cost "unground" ball bearings of inexpensive design and construction. For "top quality" at any price, specify Nice.

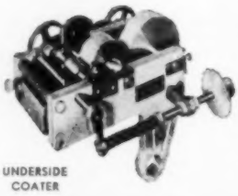
NICE BALL BEARING COMPANY
NICETOWN PHILADELPHIA PENNSYLVANIA

BREVITY—Identify by IEN - 10146 if you write the maker

POTDEVIN multi-purpose COATING MACHINES for TOP-SIDE or UNDERSIDE COATING

TOPSIDE COATER





UNDERSIDE COATER

For use as a self contained and self powered unit or for mounting on other equipment—for topside or underside solid or strip coating. Particularly suited for applying resins, varnish, adhesive, lacquer, etc., to webs or sheets of paper or other materials in widths up to 21 inches. Ductor roller adjustment controls amount of coating applied. Removable reservoir and coating rollers permit through quick cleaning.

*Write for full particulars*

POTDEVIN MACHINE CO.
1213 38th STREET · BROOKLYN 18, N. Y.

BREVITY—Identify by IEN - 10147 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

*Be sure to write for illustrated literature and prices.*

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BREVITY—Identify by IEN - 10149 if you write the maker


**SPEED HAND-LABELING ON HARD-TO-LABEL JOBS with Mystik Self-Stik LABELS**

SPEED PRODUCTION—No moistening. Stick instantly.

EASY APPLICATION on hard-to-reach, hard-to-label surfaces.

FLEXIBLE and stretchable for curved or uneven surfaces.

PERMANENT—Resistant to stain, moisture, scuffing, delamination. Removable, if desired, without staining.

BEAUTIFUL—Finest color printing; die-cut; embossed; varnished or acetate laminated.

The outstanding qualities of MYSTIK LABELS are due to rubber-saturated stock and the strongly bonded rubber adhesive, providing strength, flexibility, toughness, strong adhesion and ease of handling. Write for full information and samples.

CHICAGO SHOW PRINTING COMPANY
CHICAGO • NEW YORK

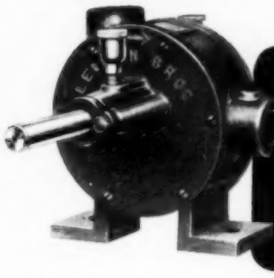
2644 NORTH KILDARE • CHICAGO 39


BREVITY—Identify by IEN - 10150 if you write the maker


**All these are "LOW PRESSURE" AIR JOBS--**

*Agitating—blowing—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—feeding—leak-testing—pressure-boosting—materials transfer, etc.*

**-handled Better, at Lower Cost, with**



**LEIMAN AIR PUMPS**
(Pressure, Vacuum, Suction)

ON hundreds of air applications requiring pressures lower than 25 p.s.i. or vacuum under 29" mercury, Leiman Rotary Positive Air Pumps are providing these advantages over any other source of air:

- Even, pulseless flow of air.
- No expensive installation, no tanks.
- Air available instantly—no waiting to build up pressure.
- No waste — runs only when air is needed.
- Very compact and portable—plug in and use anywhere.
- Provides both pressure and vacuum-suction from same source, by switching from outlet to inlet.
- Extremely quiet and trouble-free for years.
- Little or no maintenance.

*What is your operation or problem? Send us details for recommendation, without obligation.*

**TAKE UP THEIR OWN WEAR**

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, even after 15 and 20 years' steady service.

*WRITE on firm letterhead for free catalog and application folder.*

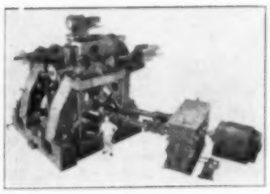
**LEIMAN BROS., Inc.** 166 Christie Street, Newark 5, N. J.

AIR PUMPS • AIR MOTORS • SAND BLASTS • DUST COLLECTORS


BREVITY—Identify by IEN - 10152 if you write the maker

## STRAIGHTENING . . Roll type machine, tubes to 16½ in., bars to 9 inches

**Source:** SUTTON ENGINEERING CO. 751 Sutton St., Bellefonte, Pa.



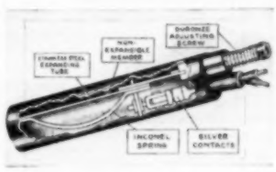
**No. 5 M KTC** designates a new size of the company's bar and tube straightening machine previously described IEN-11706-48. Capacity ranges from 4½ to 16½ in. outside diameter tube stock and 4½ to 9 in. solid bar. Drive is by a 200-hp. dc. motor for adjustable speed between 300 and 1,200 rpm. Straightening speed ranges from 60 to 240 ft. per minute. The roll necks, rotating shafts and universal joints in the assembly are mounted on Timken bearings.

**Two groups** of three rolls each are mounted on the incoming and outgoing sides of a central idler roller which deflects the work during the straightening operation. Each group includes one large driven roll and two idler rolls assembled at an angle of approximately 120 deg. with each other. The arrangement eliminates the need for guides and confines the work to the pass line. The angular alignment also provides for positive speed. Set-up is made for a given work size by power-operated screw-downs to the rolls except the middle pressure roll which is adjusted manually for angle by two handwheels. Change over can be made from straightening 5-in. to 14-in. work within two minutes.

BREVITY—Identify by IEN - 10153 if you write the maker

## THERMOSTAT . . Expanding tube design adjusts to 600 deg. F., 600, 1,000 watts

**Source:** SMITH CONTROL & INSTRUMENT CORP. Madison & Market Sts., Dept. I, Palmyra, N. J.




**Expanding tube** made of stainless steel in this new unit acts against a non-expanding Invar strip. It opens a set of silver contacts in connection with an Inconel spring that provides snap action. Position of the Invar strip is adjusted by turning a screw at the lead-in end of the assembly for control setting at any point between 0 and 600 deg. F.

**Two sizes,** known as Series 12 and Series 58, rate 600 and 1,000 watts. The former measures ½ in. in diameter by 2⅛ in. in length over the shell. Its contacts will carry 5 amp. on 110-volt ac. Sensitivity is plus or minus 0.2 deg. F. on a 1-amp. load. The larger unit measures ⅝ by 3 inches. It will carry 10 amp. on 110-volt ac. and has sensitivity of plus or minus 0 to 0.1 deg. F. on a 1-amp. load.

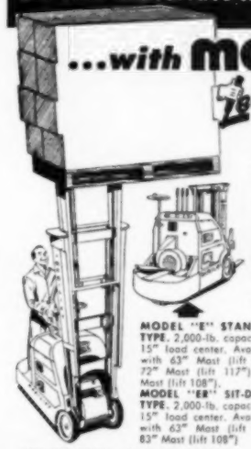
**Both units** are equipped with 6-in. glass-insulated nickel-wire leads and can be supplied for either direct or reverse action. Three designs include the conduction type, illustrated, for use directly in a metal block or by attachment to a surface, a convection type to measure air in a duct or oven with a flange for mounting, and an immersion type with pipe threads for conduit support.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 39*

BREVITY—Identify by IEN - 10154 if you write the maker


**Cut Your Materials Handling Costs**

**...with MOBILIFT Lev-R-Matic DRIVE Fork Lift Trucks**



Mobilift gas operated fork trucks are compactly designed for split second maneuverability everywhere.

3 functionally grouped levers give operator finger-tip control of tilting, elevating, forward-back movement.

Push-Pull Lev-R-Matic controls and a multiple disc clutch smoothly transmit power forward and back. There are NO GEARS TO SHIFT.

Roller chain-driven uprights allow unobstructed view between uprights.

MODEL "E" STAND-UP TYPE. 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 63"); 72" Mast (lift 117"); 83" Mast (lift 108").

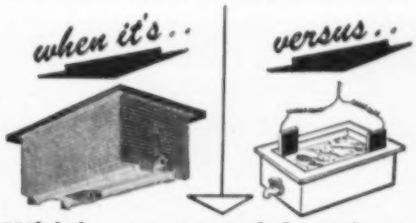
MODEL "ER" SIT-DOWN TYPE. 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 68"); 83" Mast (lift 108")

"MOBILIZE" Your Materials Handling ...Write for Specification Bulletins

MOBILIFT Lev-R-Matic DRIVE

**MOBILIFT CORPORATION**
835 S. E. Main St., Portland 14, Oregon
CHICAGO • EAST RUTHERFORD, N. J. • ATLANTA • DALLAS • BERKELEY


BREVITY—Identify by IEN - 10155 if you write the maker


**Which compound heating method would YOU choose?**

One method concentrates heat. The other method distributes heat evenly, without allowing hot spots to burn or carbonize tank contents.

One method permits cold, unheated areas in the tank. The other method gently, effectively spreads heat to entire contents without permitting cold lumps to remain.

**Which would you choose?** The "high-wattage concentrated" design or the "low-wattage distributed" design?

Thousands of users for 30 years have chosen the Sta-Warm design which evenly, economically *distributes* heat. During these years Sta-Warm has developed a full line of compound and soft metal melting tanks, pots, kettles which are highly adaptable to your requirements. Many special accessories are offered.

*Why not find out about them today?*

**Sta-Warm ELECTRIC CO.**
560 N. CHESTNUT ST., RAVENNA, OHIO


BREVITY—Identify by IEN - 10156 if you write the maker


**LOW COST BRADLEY Multi-Person Column Showers**

*Require Only Three Plumbing Connections*

**Two Supply • One Drain**

• Here's the answer to your shower requirements at low cost.

Without the usual partitions of the 3-stall or 5-stall Bradley Showers, the Column Showers are otherwise complete with drain fittings, sprayheads, soap trays, mixing chamber for temperature control with hot and cold water control valves. Ready to install.

Floor space is saved and by placing Showers away from walls, wall waterproofing is not required and space may be used for lockers and benches.

Ideal for Factories, Mines, Camps, Schools, Field Houses, Institutions.

BRADLEY WASHFOUNTAIN CO.
2215 W. Michigan St., Milwaukee 1, Wis.

BRADLEY Showers

*Distributed Through Plumbing Wholesalers*


BREVITY—Identify by IEN - 10157 if you write the maker


**WHAT DO YOU KNOW about Laminated Plastic TUBING?**

Take Synthane laminated plastic tubing for example. Do you know that it is non-metallic, corrosion resistant, has excellent dielectric strength? Do you know it is made in rolled and molded forms in many grades and sizes? Do you know which grades are best for what purposes? Or how Synthane compares to metal tubing in strength and weight?

For the answers to these and other tubing questions you may have, use the coupon below to get your copy of the Synthane Tubing Folder.

Sheets
Rods
Tubes
Molded Macerated
Molded Laminated
Fabricated Parts

SYNTHANE

SYNTHANE CORPORATION
South River Road
OAKS, PENNSYLVANIA

Gentlemen:
Please send me the Synthane Tubing folder.

Name _____
Firm name _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN - 10158 if you write the maker


**$10,440 saved per yr. by 2 DUMORE DRILL HEADS**

This $10,000 saving is "gravy" say tool engineers of F. C. Russell Company, makers of Thermoseal combination windows. "The saving in drills alone in the first 13 months use of these two Dumore units repays their entire cost!"

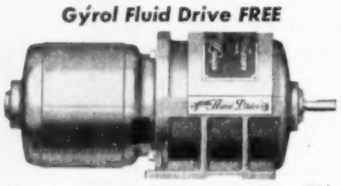
If your plant uses small drills (No. 80-1/8") you should investigate these amazing economies. Write for bulletin and report on production savings.

*Write today for free CATALOG!*

**The DUMORE Company**
Dept. E-47 RACINE, WISCONSIN
Export Address: 13 E. 40th St., New York, N.Y., U.S.A.


BREVITY—Identify by IEN - 10159 if you write the maker


**NOW TRY**
**Gyrol Fluid Drive FREE**



Here's an opportunity to try a Type TM Gyrol Fluid Drive without obligation. We invite you to install one on your own machine—on a free trial offer basis.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, absorb shocks, and provide overload protection.

Write us direct. Describe the machine on which you want to use the TM unit and give horsepower of present motor. We'll contact you to arrange installation and trial period.

**AMERICAN BLOWER**
American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

*Serving home and industry* AMERICAN-STANDARD • AMERICAN-BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON


BREVITY—Identify by IEN - 10160 if you write the maker

**The KING of STROKE and REVOLUTION COUNTERS**

*Used by the thousands in Auto and Aircraft Factories, Metal Working, Die Casting, Plastic Molding and Stamping Plants.*

**BETTER beyond comparison**
say thousands of users

**Rugged as an army tank, yet operate smooth as a watch.**
**Precision built of life-tested Materials.**
**Tamperproof Reset.**
**Streamlined—All steel housing.**
**Complete range of models.**

**PRODUCTION INSTRUMENT CO.**
700-10 W. Jackson Blvd., Chicago 6, Ill.
Please send Catalog of Silver King Counters and Brief Catalog MODERN Counting Devices.

Company _____
Name _____ Title _____
Street _____ City _____ Zone ____ State _____
SK-11


BREVITY—Identify by IEN - 10161 if you write the maker

## RETRIEVING . . Hose reel delivers coolant at a machine tool

Source: WAYNE PUMP CO.
511-21 Tecumseh St Fort Wayne 4, Ind.

**New application** for the company's standard Model-340 hose reel is shown in the illustration. The reel is mounted on a pedestal at one end of a metal-working machine. Its inlet is connected to a delivery from a coolant circulating pump. The reel-mounted hose is secured to a fitting that travels with the cutting tool to deliver liquid in a steady stream without need for attention on the part of the operator.

**The reel** is equipped with a spring that keeps the hose line tight, drawing it in as the tool approaches the reel position or paying it out in the opposite direction. The reel takes 15 ft. of ¼-id. hose. Overall height, including a bracket, is about 11 inches. Width is about 8½ inches. The housing is pressed steel. A similar unit, known as Model 343, takes 25 or 30 ft. of hose as compared to the 15-ft. model.

BREVITY—Identify by IEN - 10162 if you write the maker

## CONVEYING . . Extendable belt unit, wheel mounted, length to 17½ feet

Source: STEWART-GLAPAT CORP.
50 Stewart Ave., Zanesville, Ohio

**Height capacity** is to 10 ft. at a maximum stacking angle of 30 deg. for this new light-weight design in the company's line of Adjustoveyor extendable belt conveyors. The belt retracts to an overall length of 10 ft. or extends to 17½ feet. It can be operated at any length in between. Standard equipment includes a 14-in. rough-top rubber belt on an 18½-in. bed with the belt positioned in the clear so wide loads can be carried.

**The truss frame** will carry a total load of 850 lb. or a maximum unit weight of 300 lb. and is mounted on a base riding on ball-bearings rollers. Weight is 625 pounds. Drive is by a ½ or ¾-hp. motor. The unit represents addition to the line previously described IEN-62-51.

BREVITY—Identify by IEN - 10163 if you write the maker

## PAINTING . . Pocket instruction folder on how to care for and clean paint brushes

Baker Brush Co.
81-85 Grand St., New York 13, N. Y.

**Instructions** in new 6-page pocket folder tell how to condition paint brushes prior to use and how to clean brushes after painting. Cleaning instructions are given for brushes in daily service with oil-base paints, for brushes to be stored away, for brushes used in shellac, and for brushes in water or resin-emulsion paints. Title is "How to Make Bak-O-Blend Brushes . . . Last Longer."

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10164 if you write the maker

**MULTI-CLEAN** *Method* **FOR EVERY FLOOR**

Multi-Clean Asphalt Tile Preserver restores appearance and serviceability. Dingy, "beat-up-looking" asphalt tile quickly responds to this treatment. Multi-Clean Asphalt Tile Preserver restores color and beauty to the surface, reduces porosity and fills in minute scratches which detract from the tile's appearance and which make maintenance difficult.

There is a Multi-Clean Method for every type of floor. The procedure is determined by the specific requirements of each type. This specialized floor care saves time and labor, assures longer wear, and reduces the need for repairs and replacements.

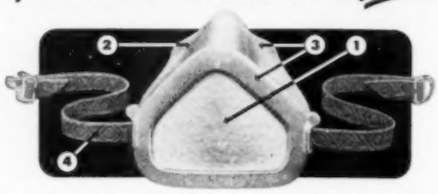
**FREE—MULTI-CLEAN FLOOR MAINTENANCE MANUAL**

Whatever your type of floor, there's a Multi-Clean maintenance manual that explains how to simplify floor care. Write today—address Multi-Clean Products, Inc., Dept. IE-10, St. Paul 1, Minn.

**MULTI-CLEAN** PRODUCTS, INC.
Custom Cleaning Chemicals
Floor and Rug Machines • Permanent Floor Finishes • Industrial Vacuums


BREVITY—Identify by IEN - 10165 if you write the maker


*4 Reasons why* **FLEX-A-FOAM** (and *only* FLEX-A-FOAM) provides Dust Protection your workers will welcome and *Wear*




1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.
2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.
3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.
4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

**FLEX-A-FOAM FILTER MASK**

Sample $1.40 postpaid
★
Write for new descriptive folder

**THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO**


BREVITY—Identify by IEN - 10166 if you write the maker

*No Noise*
*No Vibration*
*No V-Belt Drives*

**THE SWECO SEPARATOR**

Single or multi-deck vibrating screen employing an entirely new screening motion ★ No substructure vibration ★ Greater production capacities ★ Handles wet or dry materials ★ Laboratory accurate classifying and dewatering up to 325 mesh ★ Only 3 moving parts ★ Guaranteed screen cloth life ★ Lower maintenance and power requirements.

**Southwestern Engineering Company**
SWECO 4800 SANTA FE AVE., LOS ANGELES 58, CALIF.
SAN FRANCISCO • PORTLAND • SEATTLE • VANCOUVER
PITTSBURGH • CHICAGO • NEW YORK • ATLANTA • WASHINGTON, D.C.


BREVITY—Identify by IEN - 10167 if you write the maker


**NO TRAFFIC TIE-UP!**
**...WHEN YOU REPAIR WITH...**
**QUICK-FLOOR**

You can make a complete, permanent, heavy duty concrete floor patch (or covering) in *one minute* and is ready to use when placed. Placing causes no delay or interference to traffic. The rule is *place, pack,* and *use* without cutting or mixing.

**A PATCH A FOOT A MINUTE**

The continuous use of *Quick Floor* since '38 by many people *(some over three hundred drums)*, spells *satisfaction.*

*We guarantee satisfaction. Service as required.* Write for new folder.

dura-tred Co. *Manufacturers since 1938*
352 N. Central Park Blvd., Chicago 24, Ill.

BREVITY—Identify by IEN - 10168 if you write the maker

# STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

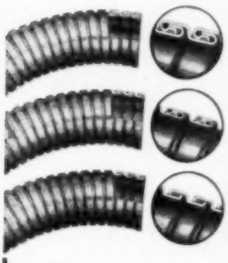
Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Earc. Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

BREVITY—Identify by IEN - 10169 if you write the maker



Strong! Durable! Flexible!

UNIVERSAL METAL HOSE

Simplify your installation and multiply efficiency of operation under extremes of pressure, temperature and vibration with UNIVERSAL Flexible Metal Hose. Each type satisfies to the highest degree requirements for hard, rough service and resistance to corrosion. The new UNIVERSAL Catalog U-101 gives details on hose types, sizes, applications and shows how UNIVERSAL Flexible Metal Hose can meet your needs exactly and help you cut cost. *Ask for your copy.*

ALL TYPES
Exhaust • Suction
Blower Hose • Conduits
Pressure Hose Fittings

*for* conveyance of gases, liquids, semi-solids, dust, etc.—for moisture-proof armored conduit and control casings—and many other applications.

RECOMMENDATIONS on your present hose conveyance problem submitted without obligation. Send us your specifications TODAY.

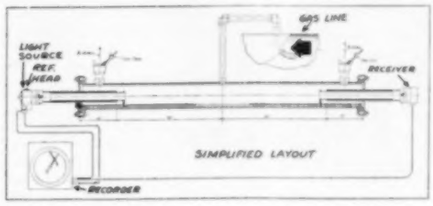
Write for CATALOG U-101 Just Published

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue
Chicago 23, Illinois

BREVITY—Identify by IEN - 10171 if you write the maker

## SIGNALING . . Photoelectric equipment reads, records dust in a gas stream

Source: GENERAL POWER PLANT CORP.
381 Fourth Ave., Room 1223, New York 16, N. Y.




**Dust concentration** in a blast-furnace gas line, fly-ash content in a boiler smoke stack, effluent in process stacks for paper, pulp and cement mills can be read, recorded and employed to signal excessive concentration by application of this new photoelectric equipment. It is shown in partial assembly in the simplified schematic outline. Accessory equipment has been removed to assist in an understanding of the basic principle.

**A gas sample** moves continuously from the sampling point in a main or flue to the center of an 80-in. test chamber made of a piece of 6-in. pipe. The gas and the entrained dust move toward the two ends of this pipe for exit at openings equipped with gas burners so the gas will be consumed. A light source and a photoelectric cell are mounted at opposite ends in slide-tube assemblies for adjustment of measuring distance through the gas between 20 and 60 inches. At the light-source end is a second photoelectric cell which acts as a reference unit to balance the electronic circuit to the Brown Electronik recorder. This recorder connects to an outside line providing 110-volt 60-cycle or 25-cycle ac.

**Complete equipment** includes a compressed-air supply line and the required fittings to introduce clean air into the test chamber for clean-out as well as initial set-up, manometers and orifices for the incoming gas-sampling line, a gas meter and the required equipment to measure the actual solids content of the gas for calibration purposes.

BREVITY—Identify by IEN - 10172 if you write the maker

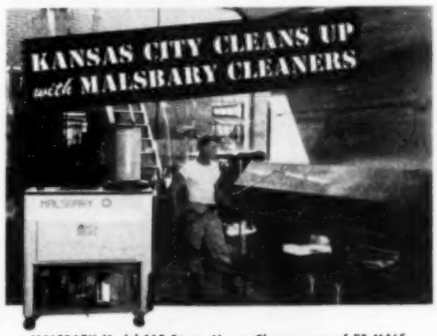
## FLOORS . . Magnesium dock board bridges platform gap to car or truck

Source: PENCO ENGINEERING CO.
23-27 California St., Dept. IEN, San Francisco 11, Calif.

**Sizes** range from 42 to 48 in. in width and from 36 to 60 in. in length with capacity at 1,000 to 5,000 lb. in this new line of truck ramps. A unit 42 in. in width by 36 in. in length weighs 47 pounds. The ramp applies between a dock and truck in which either is higher or lower than the other. It employs a stop that holds it securely in position. It permits a truck to back up to within 3 in. of the dock edge. The surface is safety-tread design. Assembly includes beveled edges and safety side rails.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10173 if you write the maker




MALSBARY Model 110 Steam Vapor Cleaner, one of 78 MALSBARYS sold for flood clean-up, blasts silt and oil from vats, motors, pumps, walls, floors of Milk Producers Marketing Co. You, too, can remove grease from floors and machines, clean dirt and bacteria from hard-to-reach places, keep your plant spotless, maintain production equipment this labor-saving way.

MALSBARY 110 is gadget-free, rugged, dependable. No trained technicians needed. Gives you hot solution (50-100 p. s. i.) in 2-3 minutes. Let us demonstrate what MALSBARY can do for you in your plant. Write TODAY for folders and name of nearest jobber.

MALSBARY MANUFACTURING CO. SINCE 1921
Room 710
845 92nd Ave.
Oakland 3, Calif.



BREVITY—Identify by IEN - 10174 if you write the maker

BROWNHOIST BUILDS BETTER BUCKETS —for less money
DIRECT FROM FACTORY TO YOU

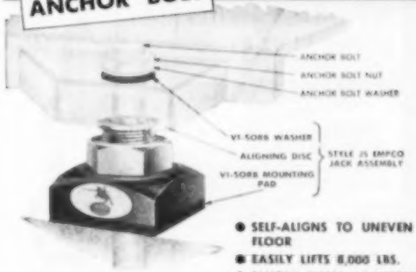
ROPE-REEVE, POWER WHEEL AND LINK TYPE
Write for illustrated catalogue
INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

BREVITY—Identify by IEN - 10175 if you write the maker

NEW JACK LOCATES ON ANCHOR BOLT

Empco JACK STYLE JS




• SELF-ALIGNS TO UNEVEN FLOOR
• EASILY LIFTS 8,000 LBS.
• SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
• VI-SORB MOUNTING PADS ABSORB VIBRATION

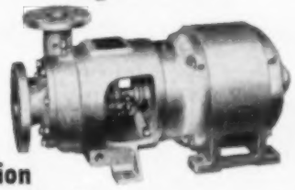
Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.
Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.
Available in three sizes: 1¾", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 10176 if you write the maker

MOTOR PUMP



Stop Production Delays with Efficient Pumping

The compact design of Ingersoll-Rand MOTOR-PUMPS makes them unusually strong and rigid. They stand up under the most severe service, require less maintenance because oversize shaft eliminates many packing troubles. MOTORPUMPS have many other features that assure long trouble-free service, less down time—and more efficient pumping for your money. And if you want pumps fast, we have 26 conveniently located branch offices and warehouses to give you prompt service.

A complete range of sizes and types: Standard and heavy duty MOTORPUMPS; cradle-mounted pumps; coolant pumps; and turbine-driven pumps. ¼ to 40 h.p. up to 1800 g.p.m. against heads up to 600 ft. also a full line of larger units.

Ingersoll-Rand
S10-9 11 Broadway, New York 4, N. Y.

BREVITY—Identify by IEN - 10177 if you write the maker

## G-E Capacitors prevent overload of transformers at American Can

When American Can installed three G-E capacitor equipments at its Los Angeles Milk Carton Division Plant, *it cut line current by 270 amperes.* This relieved an approaching overload condition on wiring and main transformers.

**THEY SAVED $1500 A YEAR, TOO,** because of a kva demand clause in the power contract. This is enough to pay for the capacitors in 26 months.

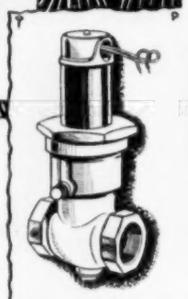
For more information, write for GEA-3167, "A Way to Cut Power Costs." *General Electric Co., Schenectady 5, N. Y.*

**GENERAL ELECTRIC**

407-203

BREVITY—Identify by IEN - 10178 if you write the maker

**ATKOMATIC**
**ELECTRICALLY OPERATED VALVES**



ATKOMATIC Valves can TAKE it! EXTRA rugged to withstand more hard use than you'll ever demand of them. Sturdy, compact, built for any pressures up to 3,000 pounds. In thousands of installations, they are delivering dependable, trouble-free service.

Wide variety of types usable for any medium not harmful to bronze. Perhaps we have already worked out YOUR valve problems . . . why not present them to us without obligation? In your plant or on YOUR product, you can always depend on ATKOMATIC.

**Send for Literature**

**ATKOMATIC VALVE CO.**
545 W. ABBOTT ST., INDIANAPOLIS, INDIANA

BREVITY—Identify by IEN - 10179 if you write the maker

**NALCO Infra-Red UNITS**

**CONCENTRATED RADIANT HEAT**
For Faster
**DRYING, HEATING, BAKING**

**Direct, Efficient Heat. Instant, penetrating heat . . . beamed exactly where it's needed . . . minimum heat loss . . . no expensive warm-up or cooling-off time.**

**Flexible. Easily, quickly adapted to your special needs, without costly or permanent installations.**

**Saves Time, Money, Space. Speeds production . . . reduces drying space.**

***Available in Banks, Strips, Portable Units and Tunnels***

**NALCO *Infra-Red* Dritherm Lamps**

**Perfect long-life answer for lamp replacements. Carbon filament for greater penetration, less glare.**

**WRITE** for special Bulletin "Drying Problems Made Easy". Use Nalco Pilot Lamps—Available in all sizes.

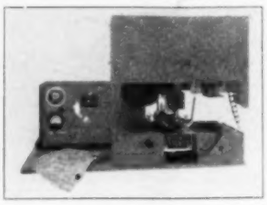
**NORTH AMERICAN *Electric Lamp Co.***

1816 Tyler St. St. Louis 6, Mo.

BREVITY—Identify by IEN - 10180 if you write the maker

## REINFORCING . . Pneumatic press, electronically heated to apply grommets

**Source: RADIO RECEPTOR CO.**
**251 W. 19th St., 5th Floor, New York 11, N. Y.**



**New combination** of pneumatic press, for connection to a shop air line, and one of the company's Type K-GS electronic power units, for operation on 110-volt 60-cycle ac., provides a means to punch grommets from a strip of vinyl plastic and heat seal them to plastic sheet material in a continuous cycle. The press will handle grommets to 2 in. in width and to 0.012 in. in material thickness.

**The material** rides as a strip on a reel that advances on each stroke of the press to position for a new blank. Downward movement of the punch carries the blank with it, presses it into place on the sheet material which has been introduced by the operator. The punch retracts ready for the next cycle following a timer controlled dwell interval during which heat is supplied from the electronic power unit.

**Dimensions** of the power unit are 20 by 12 by 12 inches. The press, known as Type GX, measures 24 by 19 by 26 inches. The grommets can be punched from the strip plain or with a center hole. Operation is on 70-lb. air-line pressure.

BREVITY—Identify by IEN - 10181 if you write the maker

## PRINTING . . Belt feed machine exposes, develops, dries and delivers

**Source: CHARLES BRUNING CO.**
**100 Reade St., 1st Floor, New York 13, N. Y.**

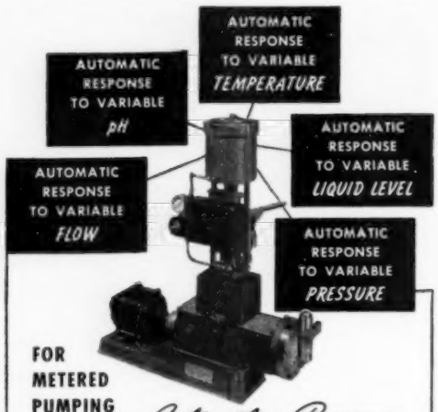
**Width capacity** is to 46 in. and printing speed is to 95 ipm. in this new Model-20 machine in the company's Copyflex line of equipment. It is designed for engineering departments, drafting rooms, accounting departments, business offices. It will make white or colored reproductions of anything that is typed, printed, written or drawn.

**Operation** is on a 110-volt 60-cycle ac. line. The company is prepared to supply sensitized paper, film, cloth. Each dry finished print presents black or colored lines on a white or tinted background depending on the stock selected. No exhaust duct or extra ventilation is required. Copies processed in the machine are delivered stacked, ready to use.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

FIND WHAT YOU WANT?
All products and services are indexed on page 118

BREVITY—Identify by IEN - 10182 if you write the maker




**FOR METERED PUMPING** *in Automatic Response* **TO VARIABLE PROCESS DEMAND**

***WRITE*** for complete description and specifications. Lapp Insulator Co., Inc., Process Equipment Division, 471 Maple St., LeRoy, N. Y.

**Lapp** *Auto-Pneumatic* **PULSAFEEDER**

PISTON-DIAPHRAGM CHEMICAL PROPORTIONING PUMP

BREVITY—Identify by IEN - 10183 if you write the maker

*The only really flexible grinding wheel ever offered!*

**BAY STATE**

Available For Shipment 7x1/8x7/8 and 9x1/8x7/8 in any of these grit sizes: 36, 54, 80

**BAY STATE ABRASIVE PRODUCTS CO., Westboro, Mass.**

Branch Offices and Warehouses—Chicago, Cleveland, Detroit, Pittsburgh. Distributors—All principal cities. In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Rexdale, Ontario.

BREVITY—Identify by IEN - 10184 if you write the maker

**tell working temperatures with Tempilstiks°**

Available In These °F.
113 125 138 150 163 175 188 200 213 225 238 250 263 275 288 300 313 325 338 350 363 375 388 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000

***It's this simple:*** Mark your workpiece with the proper Tempilstik°. When the mark melts, the specified temperature has been reached.

There is a Tempilstik° for every temperature commonly specified in preheating for welding, stress-relieving, tempering, molding and scores of other heat-dependent operations.

**Free**—Send for sample pellets. Check temperature of interest to you.

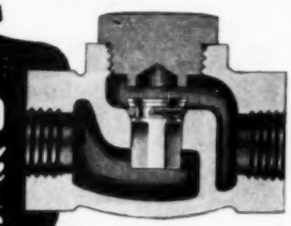
BOOTH C-117 — NATIONAL METALS SHOW DETROIT, OCT. 15-19

**$2** each gives up to 2000 readings

**Tempil° Corporation**
132 West 22nd Street, New York 11, N. Y.

* We invite inquiries from reputable distributors interested in handling Tempil° products.

BREVITY—Identify by IEN - 10186 If you write the maker



# Viloco Check Valves

*Designed*

**to do a BETTER JOB . . .**

**BUBBLE TIGHT . . . NO LEAKS**

- ✔ Neoprene "O" ring plunger seat.
- ✔ Remains tight after thousands of operations.
- ✔ Ideal for air lines in brake systems.
- ✔ Tested to 300 lbs. p. s. i. pressure.
- ✔ Made in ¼"—⅜"—½" sizes with or without bleed orifices.

**VILOCO RAILWAY EQUIPMENT CO.**
332 S. Michigan Avenue • Chicago 4, Illinois

BREVITY—Identify by IEN - 10187 If you write the maker

# Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

**GET THE DETAILS!**

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

**TEAR OUT THIS AD,** check the boxes and mail TODAY!

☐ **Soluble Oil Coolant** → Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

☐ **Chip and Waste Removal** → Case Histories: Manufacturer of Fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

☐ **Machine Tool Cutting Oil** → Case History: Wagner Electric Corp., St. Louis.

☐ **Oil Quenching** → Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

☐ **The Facts About Clean Oil** → 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

☐ **Hydraulic Bulletin** → 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

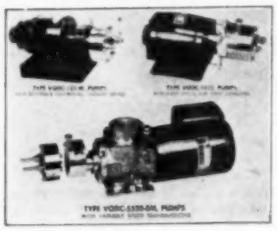
CLEAN OIL ENGINEERING

**Honan-Crane Corp.**
802 WABASH AVENUE
LEBANON, INDIANA
A Subsidiary of **Houdaille-Hershey Corp.**

BREVITY—Identify by IEN - 10189 If you write the maker

## PUMP . . Rotary gear design exactly meters small amounts of fluid

**Source: MECHANICAL PRODUCTS CORP.**
**166-70 N. Ogden Ave., Chicago 7, Ill.**




**New design** of the company's miniature stainless-steel rotary gear pump, previously described IEN-7687-48, provides for quick application or removal from the drive after releasing a single thumb screw. This permits interchange in variable-speed and constant-speed arrangements to handle a variety of fluids, both hot and cold, viscous and non-viscous.

**Examples** are soap, oils, perfumes, liquid fats, grease, wax, glue, liquid chemicals and food products, including water, coffee, chocolate, concentrated orange juice, extracts. The pump head can be steam sterilized.

**Type VQDC-132W,** is shown mounted on governor-controlled variable-speed motor rating 1/25 hp. for operation on 110-volt 60-cycle ac. Its output capacity is to 30 cc. per second. It is designed for laboratory use and for short-run operation.

**Type VQDC-2412** is a fixed-capacity unit mounted on a 1/12-hp. 110-volt 60-cycle ac. motor. Various fixed-speed transmissions are available for ratings from 10 to 75 cc. per sec., based on water. Capacity can be throttled to 2 cc. per sec. by restricting the discharge or by employing a restricted by-pass from the discharge to the intake side.

**Type VQDC-5520-EM** is a variable-capacity assembly employing a Graham variable-speed transmission and a 1/6-hp. 110-volt 60-cycle ac. motor. Rating is to 25 cc. per second. It measures 6½ by 8 by 18 in., weighs 33 pounds.

BREVITY—Identify by IEN - 10190 If you write the maker

## TESTING . . Ultra-violet light unit and battery to signal liquid leaks

**Source: GEORGE W. GATES & CO.**
**43 Hempstead Turnpike, Franklin Square, N. Y.**

**Raymaster** Model TFS4-B90 is a new assembly of black-light lamp and reflector, the latter measuring 6½ by 1¾ by 3¼ in., and a battery and carrier measuring 4¼ by 5¼ by 8 in. for a total weight of 12 pounds. The equipment supplies black light that is directed at locations suspected of leaking.

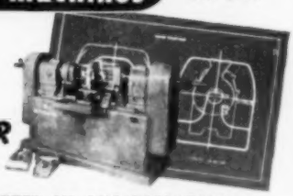
**The light** causes even slight flow through a defect to glow brightly when the liquid contains a previously added dilute solution of a fluorescing agent. The equipment is particularly suited for use on pressure vessels of various types. The space where the black light is applied is darkened so the fluorescence will be visible in event of a leak.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 10191 If you write the maker

# CLEVELAND tapping machines lead screw

**300 PIECES PER HOUR**



**BOTH SIDES TAPPED IN ONE OPERATION**

For a leading appliance manufacturer Cleveland engineers designed a Cleveland Tapping Machine to tap four 10-24 and one 6-32 holes in the top face of the main casting and five 10-24 and two 8-32 holes in the bottom face . . . both sides simultaneously all with lead screw controlled spindles to assure complete accuracy. On needed civilian and on defense jobs Cleveland Tappers are reducing production costs and saving priceless man hours. With a Cleveland Tapper engineered to the job, a semi-skilled worker becomes a skilled operator.

**CHECK WITH CLEVELAND FIRST** if you need to perform any or all of these operations: Tapping . . Threading . . Drilling . . Spot-facing . . Reaming . . Chamfering. Cleveland engineers can help you with your problem, show you how to effect economies in these operations.

Mr. Lead Screw says . . . Write for your copy of the Cleveland Production Tapping Guide and a copy of Catalog Y-7.

**THE CLEVELAND TAPPING MACHINE CO.**
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC.
CANTON 5, OHIO

BREVITY—Identify by IEN - 10192 If you write the maker

# EVERY ENGINEER will want a copy of this BULLETIN

**SEND FOR BULLETIN 110**

● It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8" . . . any length stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Send for Bulletin 110. Hannifin also builds custom cylinders in any quantity to special designs. *Bring us your cylinder problems!*

**HANNIFIN CORPORATION**
1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 10193 If you write the maker

*Let this all-purpose*

# DEWALT

*save money in Your plant*

Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space—and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., Dept. IE-10, Fountain Ave., Lancaster, Penna.

**DEWALT INC.**
A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 10194 If you write the maker

# NEW 7½ TON PUNCH PRESS OFFERS 9" DIE SPACE!

Write for FREE circulars

Ample working space for easier tooling, feeding, ejection of large slugs.

ALSO AVAILABLE:
1-Ton and 4-Ton Standard, and 4-Ton Deep-Throat Models.

**benchmaster** PUNCH PRESSES AND MILLERS
2952 West Pico Boulevard, Los Angeles 6, California

BREVITY—Identify by IEN - 10195 If you write the maker


The economical, sure way—to avoid ROT and TERMITE damage!

Where steam and vapor from industrial processes are prevalent wood decay is accelerated—use Wolmanized lumber to avoid costly damage.

Wolmanized* *pressure-treated* Lumber assures *lasting* protection. High pressure (150 p.s.i.) drives the preservatives deeply into the wood. Volumetric absorption of the preservative solution is measured in gallons per cubic foot—not in feet of coated surface.

Millions of feet of Wolmanized pressure-treated Lumber have been in service under severest conditions, for years. Write for facts about Wolmanized Lumber. Or, ask for copy of "Service Records" of uses in scores of industries and applications.

**American Lumber & Treating Co.**
1641 McCormick Bldg., Chicago 4, Ill.

*Wolmanized is a registered trademark of American Lumber & Treating Co.

**Wolmanized** PRESSURE TREATED **Lumber**
Stops Rot and Termites


BREVITY—Identify by IEN - 10196 If you write the maker


*American Folding Chairs*

NEW IMPROVED DESIGN!

**BEST FOR EVERY FOLDING CHAIR PURPOSE!**

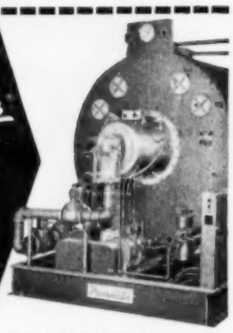
- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra-wide, extra-deep seats and backs
- CONVENIENT—fold quietly, quickly, compactly
- RUBBER SHOES—long-life, replaceable
- SEAT STYLES—formed plywood with durable lacquer finish; or vinyl-plastic upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR DESCRIPTIONS AND PRICES *American Seating Company*
Grand Rapids 2, Michigan
Branch Offices and Distributors in Principal Cities


BREVITY—Identify by IEN - 10197 If you write the maker


ONLY THE *Powermaster* GIVES YOU ALL 3 ADVANTAGES



**1.** Wide range between high and low fire—you use less fuel. **2.** Freedom from carbon cuts clean-up time and expense—usually by 50%. **3.** Change from oil to gas (or gas to oil) in a few minutes.

*To Cut Your Steam Costs Mail Coupon Today*

ORR & SEMBOWER, INC. • 860 Morgantown Road • Reading, Pa.
Please send my free copy of the POWERMASTER catalog.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____


BREVITY—Identify by IEN - 10198 If you write the maker

## LIGHTING . . Fluorescent fixtures for use with standard T-12 40 watt lamps

Source: MITCHELL MFG. CO.
73-77 E. Wacker Drive, Chicago 1, Ill.

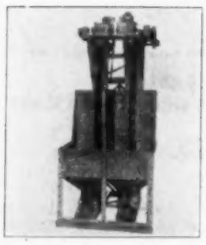
**Two new designs** have been added to the company's Dynalite line of industrial fluorescent lighting fixtures to make up assemblies 4 ft. in length with two or three 40-watt lamps and similar assemblies 8 ft. in length with either four or six lamps. The 4-ft. and 8-ft. lengths are nominal. The company will supply the actual dimension data on request.

**The body channel** and reflector are made of 20-gage steel, the company's Perma-Latch connecting the reflector to the body without requiring tools. Porcelain-enamel or baked-enamel finish can be specified for the reflector. Overall width is 13¾ inches. Depth is a little over 7 inches. The units can be used end to end or singly with chain, conduit or stem mount end to end or singly by chain, conduit or stem.

BREVITY—Identify by IEN - 10199 If you write the maker

## CONVEYING . . Hopper and chain to elevate work for processing

Source: MAY-FRAN ENGINEERING INC.
1694 Clarkstone Road, Cleveland 12, Ohio



**Typical unit** in a new line of combined hopper and multiple-chain assemblies is shown in the illustration. It takes work pieces such as small forgings, castings, stampings, machined parts from a supply hopper and delivers them for process operation such as heat treating, sand blasting, washing, where delivery is required at an elevated position.

**The assembly** shown stands 16 ft. in height, recesses 68 in. into the floor to bring the storage hopper flush with the floor surface. The two conveyor chains form the bottom of the hopper to pick up parts and carry them upward for delivery. Variable-speed drive can be specified. Each assembly is built to meet required operating conditions.

BREVITY—Identify by IEN - 10200 If you write the maker

## WELDING . . Instruction booklet on how to set up and use stud welding equipment

K S M Products Inc.
6510-14 Park Ave., Merchantsville 8, N. J.

**Recommended** procedures are set forth by text and pictures in new 28-page pocket-size booklet, "Operating Your Stud Welder." Equipment hookup, generator and timer settings, step-by-step instructions, troubles and remedies, do's and dont's are included. Sequence drawings show a stud weld.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10201 If you write the maker

TRIPLE PURPOSE MACHINE
FILES...SAWS...STONES

**ILLINOIS** DIE FILING MACHINE

An accurate, smoothly-operating machine that files, saws and stones the most intricate die shapes . . . eliminates tedious hand operations . . . reduces costs. It is quality-built for long, trouble-free service . . . hardened and ground shafts running in bronze bushings minimize wear. The holding chuck and clamping device provide perfect file alignment.

Sawing

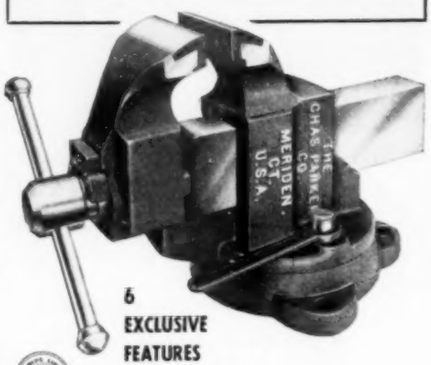
Write for descriptive literature

Staning

**ILLINOIS TOOL WORKS**
2501 N. Keeler Ave. • Chicago 39, Ill.
MANUFACTURERS OF METAL CUTTING TOOLS AND SHAKEPROOF PRODUCTS


BREVITY—Identify by IEN - 10202 If you write the maker


**PARKER VISES**
*Complete Line Including*
HINGED PIPE VISES • WOODWORKERS' VISES



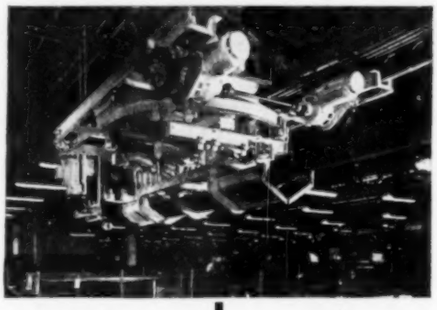

6 EXCLUSIVE FEATURES

*Write for catalog*
*Sold 100% through distributors*

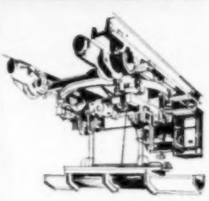
THE CHARLES PARKER CO.
MERIDEN CONNECTICUT


BREVITY—Identify by IEN - 10203 If you write the maker


**INCREASES FLOOR CAPACITY 50%**



OVERHEAD MONORAIL SYSTEM PERMITS INSTALLATION OF 50% MORE SCREW MACHINES —WITHOUT EXTRA BUILDING



A large manufacturer of farm implements solved "expansion pains" in the automatic machine department by installing a Louden Monorail System to handle bar stock.

In addition to increasing by 50% the number of machines in the same floor area, the labor force in this department was cut from 9 men to three men.

"Down time" from shortage of raw stock has been virtually eliminated, since the carrier cab is in continuous telephone contact with a dispatcher, who directs the supply of bars to machines.

All functions are motor driven and controlled from the cab. The hoist can be rotated 90° to permit accurate positioning of the stock in the machine racks.

**FREE ILLUSTRATED BOOK**
Case histories telling how Louden Monorail Systems have saved time and money for widely different kinds of industries are described and pictured in a new book called, "Economical Material Handling". Write for your copy.

**THE LOUDEN MACHINERY COMPANY**
5111 S. Superior Ave., Fairfield, Iowa

*Louden*
OVERHEAD MATERIAL HANDLING

BREVITY—Identify by IEN - 10205 if you write the maker

# Forget fuel worries

**with IRON FIREMAN GAS-OIL Combination Firing**

***Change from one fuel to another in a matter of minutes***

Here's double economy for your plant. Iron Fireman's gas-oil combination protects you against costly shutdowns due to emergency fuel shortages—saves money by taking advantage of special seasonal rates in many areas. Gas burner is a high-pressure ring type burner. Fires either natural or mixed gases with top efficiency. The Iron Fireman Rotary Oil Burner is designed to fire No. 6 oil or lighter. Fits all types of high or low pressure boilers and industrial applications. (Capacities up to 500 boiler horsepower). Write for detailed information and specification charts.

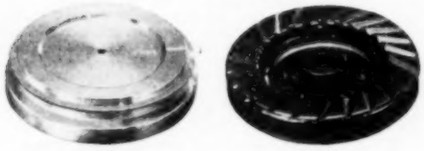
**IRON FIREMAN**
MANUFACTURING COMPANY
3174 WEST 106TH STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 10206 if you write the maker

# PROFIT HAS MANY FORMS

***when the material is DUREZ***

## WIRE RECORDER TURNTABLE COSTS 30% LESS



OLD NEW

This metal turntable for a wire recorder involved repeated handling in machining, finishing, and assembly. On top of these costs, the manufacturer had a high reject rate. Troubles were ended by using Durez asbestos-filled phenolic plastic, molded to .003" tolerance on the full diameter of the turntable. Perfect balance and dimensional stability are required. Since the drum serves as a friction clutch, unvarying tension is needed to prevent breaking of the .004" recording wire. The satin-smooth Durez part meets this with zero rejections... costs 30% less installed.

## TRANSFORMER SWITCH FRAME

***molded 50% faster, needs no machining***

Excellent arc-resisting qualities determined the choice of a Durez phenolic in this transformer switch frame for operation in oil. Output was speeded up 50% by using the proper molding technique. This included preheating, which shortened the molding cycle and enhanced the dielectric properties of the material by improving the density. Thin walls as well as thick sections withstand required voltage without breakdown. Use of loose coring eliminated machining, and took full advantage of other properties inherent in Durez.

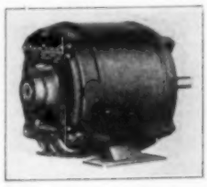
**FOR YOUR JOBS,** Durez phenolics offer important mechanical, electrical, and chemical properties in numerous combinations. Many are available to molders desiring approval under MIL-P-14A. Let our field technicians help you to use Durez molding compounds and resins profitably. To keep informed on industry's use of phenolics, write (on your letterhead, please) for our monthly Plastics News, Durez Plastics & Chemicals Inc., 1710 Walck Road, N. Tonawanda, New York.

**DUREZ** *Phenolic Plastics that fit the job*

BREVITY—Identify by IEN - 10208 if you write the maker

## MOTOR . . Split phase ac. rates ⅓ hp., 1,750 rpm., 115 volts

Source: CENTURY ELECTRIC CO.
1804-8 Pine St., St. Louis 3, Mo.



**Special Service** designates a new Type-SP split-phase motor in the company's ac. line. It provides high starting torque and is for use where high starting current is not objectionable. Construction includes cast-iron end brackets in ventilated drip-proof design, welded-steel frame with welded-steel feet or cushioned-frame mounting with end support brakets.

**The rotor shaft** rides in bronze sleeve bearings. Wool yarn assists in handling lubrication from a reservoir at each bearing. The rotor is made of cast aluminum, dynamically balanced. Laminations are skewed for quiet operation. Plastic insulation holds the coils in rigid assembly, prevents magnetic vibration and damage from chafing. The insulation is moisture resistant. Ventilating passages keep the motor cool.

BREVITY—Identify by IEN - 10209 if you write the maker

## LUBRICATING . . Fortified oil for automotive diesel and gasoline engines

Source: TEXAS CO.
135 E. 42nd St., Room 2208, New York 17, N. Y.

**In Grades 10 through 50**

**New oil** known as Ursa Oil X Sup. One has been developed by the company for use in heavy-duty gasoline engines and high-speed diesel engines operating under adverse conditions such as those produced by using a high-sulfur fuel. The new oil meets military specifications MIL-O-2104. It includes 2-104B. approved oil which will also pass the CRC-L-1 long-time diesel-engine endurance test when employing a diesel fuel containing 1 per cent sulfur. The oil is highly detergent and resists oxidation and bearing corrosion.

BREVITY—Identify by IEN - 10210 if you write the maker

## TRUCK . . Two wheel magnesium unit weighs 19 pounds, rates 450 pounds

Source: MAGLINE INC.
1947-51 Mercer St., Dept. H, Pinconning, Mich.

**The foot** on this new Model-14 magnesium hand truck measures 18 in. in width by 8 in. in depth, the width extending across the wheels to prevent contact between the load and the wheel tires. The truck frame is equipped with two magnesium strips between the side members so small package loads will not fall through. Overall dimensions of the frame are 12 in. in width by 48 in. in overall height or 40 in. without the handle. List price is about $32.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10211 if you write the maker

# "Carryers"

## . . Are Easy to Handle in Production Operations

• These "Carryers" are engineered and built on order to meet the specific requirements of your parts and your system of handling. They may be handled manually, by hand truck singly or in stacks or on pallets, or by overhead or other conveyor. Parts are washed or degreased without removal from "Carryers." Critical surfaces are protected, handling time saved, non-productive time reduced, packing costs eliminated when carriers are used for interplant shipments.

**Circular on Request**

PIONEERS SINCE 1929 . . . IN WIRE CARRIERS AND MISC. TOTE BIN BASKETS

*"If it's made of wire, we can make it"*

SPECIALISTS IN MEANS OF SUSPENDING MACHINED PARTS

**MID-WEST WIRE PRODUCTS CO., INC.**
JERRY GERALDS, President
FENKELL AT LINWOOD • DETROIT 21, MICH.

BREVITY—Identify by IEN - 10212 if you write the maker

THEY REALLY TAKE A BEATING . . . AND YOU CAN'T BEAT 'EM FOR CUTTING COSTS!

# ILLINOIS GLOVES

ARE BUILT TO LAST

What's your glove problem? Heat . . . oil . . . water . . . acid . . . taking your glove bills down for the count? Get Illinois gloves . . . they're engineered for the job . . . tested in the lab and on the job! And, because Illinois gives you longer wear, the finest quality at the price, Illinois Gloves are your best buy!

Write Industrial Division Illinois Glove Company for catalog & prices

**ILLINOIS GLOVE CO., CHAMPAIGN, ILL.**

BREVITY—Identify by IEN - 10213 if you write the maker

# Sub-Contract Service

## ON DEFENSE OR CIVILIAN WORK

We are equipped to handle volume production of your defense or civilian work. Check your needs against these services and facilities:

**STAMPINGS** — Over 80 presses up to 125-ton capacity — blank and draw presses included. We furnish dies on request, handle complete job for you.

**ROLLED SHAPES** — 10 rolling machines for simple or intricate rolled shapes. Greene rolled forms are used by leading firms the world over.

**PLATING** — Nickel, chrome, cadmium, brass, bronze and zinc.

**POLISHING & BUFFING**—Hand and automatic equipment.

**PAINTING** — Spray and dip — air or oven drying — Bonderizing.

**ASSEMBLIES** — Spot welded, screw fastened, etc. Screw machine sources available for combinations of turned and stamped parts.

G-10a

PROMPT QUOTATIONS. Send blueprints or ask to have representative call.

**Greene of Racine**
GREENE Manufacturing Company, Inc., Racine, Wis.

BREVITY—Identify by IEN - 10214 if you write the maker

# STOP WORRYING about Down Time

*Switch* to **PLATECOIL** for
(REPLACES PIPE COIL)

## TROUBLE-FREE Tank Heating and Cooling

Platecoils have many times the useful life of pipe coils thus preventing many production delays. When repairs are necessary, plates are changed from outside the tank in a matter of minutes without dumping tank solution. You can save STEEL, MAN-HOURS and MONEY by using Platecoils and you will enjoy TROUBLE-FREE heating and cooling.

NEW Technical Manual No. P56 simplifies the solution of heat transfer problems. Send for your copy today.

**PLATECOIL**
Division
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

BREVITY—Identify by IEN - 10215 If you write the maker

*feature for feature...*

**THIS NEW SQUARE D VOLTAGE TESTER**

*Tops them ALL!*

*for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan*

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

**SQUARE D COMPANY**

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 10216 If you write the maker

**HANSEN HOSE CLAMP**

**2 WAY GRIP RE-USABLE...**

Easy to install, easy to remove for hose renewal. May be used over and over again. Ferrule with special internal left-hand thread holds outside of hose—right-hand stem thread locks inside. Long stem prevents cutting hose. Available for hose 3/16" to 3/4" I.D. with male or female pipe threads, or with swivel nut. All parts machined from solid brass rod.

*Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick-connective couplings—also sand blast cleaners and air spray cleaners.*

**THE HANSEN MANUFACTURING COMPANY**

4031 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 10217 If you write the maker

In the hushed interior of this roomy, airy Burgess-Manning Acousti-Booth you hear easily . . . clearly while telephoning. A thick blanket of sound-absorbent material lines the walls to soak up noise. You can talk in a normal voice without strain.

Doorless construction. Easy to maintain. Movable. Handsome appearance. Wall or floor models.

**Hear Here!**

*You can hear clearly in this quiet atmosphere*

**Mail Coupon For Free Booklet**

Burgess-Manning Company
Architectural Products Division
5970-A Northwest Highway
Chicago 31, Illinois

Please send me your booklet describing Burgess-Manning Acousti-Booths.

Name_____

Firm Name_____

Street_____ City_____ State_____

BREVITY—Identify by IEN - 10218 If you write the maker

## PACKAGING . . Automatic machine for sandwiches, cookies, small pies

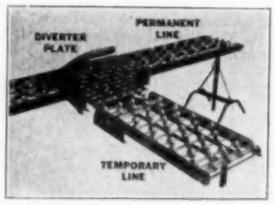
**Source: PACKAGE MACHINERY CO. Longmeadow, Springfield, Mass.**

**Model U-6** is a new automatic machine with adjustment for package lengths at a single handwheel. Height and width adjustment are automatically taken care of by a self-measuring paper feed. The machine operates at a speed of approximately 40 packages per minute. It will wrap 1, 2 or 3 sandwiches stacked on top of one another as a single unit. A tap-labeling device can be specified to imprint labels in roll form with a desired message, to cut them from the supply roll and seal them to the top of the packaging. Provision for cleaning the machine is in accordance with current sanitary regulations. The design is particularly for use by catering organizations and producers who supply factories, trains, airlines with the wrapped items.

BREVITY—Identify by IEN - 10219 If you write the maker

## CONVEYING . . Diverter section moves cartons from wheel conveyor

**Source: RAPIDS-STANDARD CO. 342 Rapistan Bldg., Dept FD, Grand Rapids 2, Mich.**




**Flow Diverter** is a new wheel-equipped plate section that assembles on a wheel conveyor to turn cartons riding a permanent line at 90 deg. and remove them to a temporary line. A guard rail mounted on the outside of the diverter provides means to guide the cartons in addition to the action of the angle-set wheels that protrude.

**A 3-ft. section** of wheel equipped conveyor is supplied with the diverter. Both are made of aluminum. Application can be made with 18-in. conveyor employing 16 or 18 wheels to the foot in the company's standard lines.

BREVITY—Identify by IEN - 10220 If you write the maker

## AWARDS . . Color picture book shows merchandise awards for incentive campaigns

Belknap & Thompson
1514-18 S. Wabash Ave., Chicago 5, Ill.

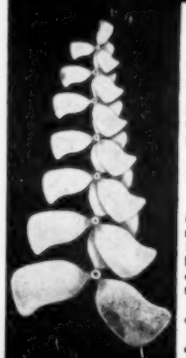
**Two sections** in the company's 1952 prize incentive book consist of a 52-page catalog of stock brand-name merchandise and a 16-page supplement issued quarterly. Items in the first are carried in sufficient supply to guarantee delivery for the 12-month life of the catalog. Those in the supplement have delivery guaranteed for 90 days. Listings and illustrations, many in color, cover 1,635 merchandise incentive awards.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10221 If you write the maker

Kloppenborg (one piece) Cast Aluminum

**EXHAUST and CIRCULATING FAN BLADES**



**INDUSTRIAL USE**

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

**SEVEN SIZES**

Kloppenborg Fan Blades are made in 7 sizes from 12" to 24" and are rated at 1750 RPM to deliver from 1225 to 8165 CFM. They are machine bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans. DO 97 orders will receive special consideration.

**KLOPPENBORG ALUMINUM FOUNDRY**

Established 1938

DAVENPORT 5, IOWA

BREVITY—Identify by IEN - 10222 If you write the maker

***DO YOU WANT FORMULA CONTROL?***

**ROCKWELL INDUSTRIAL METERS**

*MEASURE ALL THESE LIQUIDS AND MORE!*

Acetone, Alcohols, Ammonia, anhydrous, Ammonia, aqueous, Amyl Acetate, Asphalt, hot liquid, Beer, Benzene, Benzol, Bleach, Butane, liquid, Carbon Tetrachloride, Caustic Soda solutions, Coal Tar, Cod Liver Oil, Cotton Seed Oil, Creosote Oil, Cresol, Cresylic Acid, Cutting Oil, Cyanide Solutions, Dyco Thinners, Fuel Oil, Gasoline, Gin, Glycerine, Grease, lubricating, Hot Water, Kerosene, Lacquer Thinners, Linseed Oil, Lubricating Oil, Molasses, Naphtha, Oil, mineral, Prestone, Propane, liquid, Rum, Soap, liquid, Sodium Carbonate, solution, Sodium Hydroxide, solution, Toluene, Trichloroethylene, Thinners, Turpentine, Varnish, Water, Whiskey, Wine

Get highest accuracy when handling, blending, processing, liquids. Get Rockwell meters, performance-proved to stop waste; to save materials, labor, money. Sizes ⅛" through 3". Choice of registers. Bulletin free.

**ROCKWELL MANUFACTURING COMPANY**
PITTSBURGH 8, PA. Dept. J

***CHECK . . .***

. . . products you wish to measure, tear out ad and mail with name and address as an inquiry.

BREVITY—Identify by IEN - 10223 If you write the maker

# UN-O-VEYOR

## *UNIVERSAL OVERHEAD CONVEYOR*

**THE LOW-COST WAY TO BOOST PRODUCTION**

Here's the first *New-Type* Chain invented in years—already a huge success in installations all over the country . . UN-O-VEYOR offers one exclusive feature after another to increase efficiency, boost production, cut maintenance—*yet cost is well within the budget of every plant operator.*

No matter how your work-flow is arranged, it's simple—and inexpensive—to install UN-O-VEYOR to handle it perfectly . . *Your own crew can erect it.*

Here's the ingenious patented UNIVERSAL JOINT and LOCK, cast as an integral part of the chain, which keeps cost down, sends operating efficiency up. MALLEABLE IRON LINKS resist wear, carry loads up to 100 lbs. and more per trolley . . BALL BEARING WHEELS (2 load and 2 thrust per set of links) are hardened steel, mean smooth, quiet operation.

**AMAZINGLY FLEXIBLE . . SINGLE OR MULTIPLE DRIVE . . ANY DESIRED LENGTH CONVEYOR . . SINGLE OR MULTI-FLOOR LAYOUT . . NO CORNER SPROCKETS.**

**★ SEND FOR FURTHER DETAILS, PRICES, TODAY!**

***Michna* SYSTEMS**

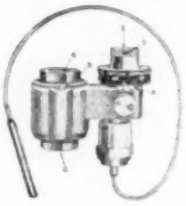
**CONVEYOR MANUFACTURERS & ENGINEERS**

5051 S. WESTERN BLVD., CHICAGO 9, ILLINOIS

BREVITY—Identify by IEN - 10224 If you write the maker

# TEMPERATURE CONTROLLER

**Automatically throttles gas supply to maintain desired temperature. Five ranges between 0 and 1000 deg. F. on supply pressures to one pound.**



One feature of this No. 40 control is that its valve is moved only just enough to feed the gas needed by an oven, heater, melting furnace or soldering equipment to compensate for changes in heat demand as established through its temperature-sensitive bulb. There is no overshooting or undershooting around the control point which you set on its rotating dial.

One unit in our complete line of high as well as low-pressure gas controls, this No. 40 is made in four sizes for pipe lines of ⅜ to 1 inch, and five heat ranges, 0 to 150; 50 to 350; 100 to 450; 100 to 650 and 100 to 1000 deg. F. Standard equipment includes a 5-ft. steel temperature-sensitive, mercury actuated, flexible element. List prices range from $40 to $52 in uncalibrated and calibrated designs.

**BULLETINS 206 AND 250 PROVIDE DETAILS, SHOW BULB CONSTRUCTION FOR SPECIAL INSTALLATIONS. BULLETIN 340 SHOWS COMPLETE LINE.**

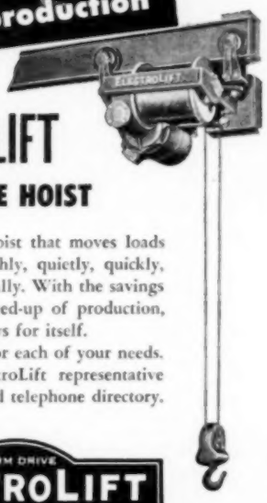
**THE PARTLOW CORPORATION**

4 CAMPION ROAD NEW HARTFORD, N. Y.

BREVITY—Identify by IEN - 10225 if you write the maker


save handling—
speed production

with
ELECTROLIFT
WORM DRIVE HOIST



Here's a one-man hoist that moves loads up to 6 tons smoothly, quietly, quickly, safely and economically. With the savings in handling and speed-up of production, ElectroLift easily pays for itself.

There's a model for each of your needs. Just call your ElectroLift representative listed in the classified telephone directory. Or write to:

WORM DRIVE ELECTROLIFT HOISTS

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.


BREVITY—Identify by IEN - 10226 if you write the maker

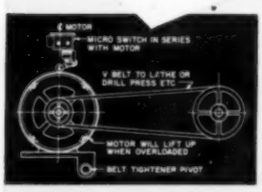

How MICRO Precision Switches protect Plant Equipment ...Automatically

Plant production men in every line of industry are giving old equipment new life and lowering production costs by the use of MICRO precision switches.

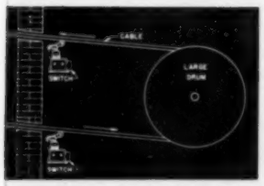
Two examples of how MICRO roller-arm actuated snap-action switches are used to make equipment safer and more automatic are shown on this page.

Your plant, too, undoubtedly has many places where these small, rugged and dependable switches can be profitably installed on present equipment as limits, safeties and interlocks. Find out today how MICRO SWITCH provides them with housings and actuators to fit your specific needs.

*There is a MICRO SWITCH Distributor near you. They are located in over 120 cities. Look under "Switches, Electric" in your classified phone book.*




Stalling or overload of the equipment causes motor to rise slightly, actuating snap-action switch and shutting off motor. Blown fuses or motor burn-out are avoided.




Slight slackening of cable attached to mine skip actuates snap-action switch in cable slit in engine room wall, causing flasher or bell to warn engineer.

Write for your copy of "MICRO TIPS" today.

Full of practical ideas like those shown here, "MICRO TIPS" will be mailed to you regularly on request.

MICRO MS SWITCH
Freeport, Illinois
A Division of Minneapolis-Honeywell Regulator Company


BREVITY—Identify by IEN - 10228 if you write the maker

## TRANSFORMER . . Butyl-molded unit, rates 600 volts, single and polyphase

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

**New design** of the company's butyl-molded transformer, previously described IEN-5297-49, has been added to that original design. The new unit can be employed both indoors and outside on single-phase and polyphase circuits. First in the new line is Type JKP-O, a 600-volt window-type current transformer with primary ratings of 200, 400 and 600 amperes. It is designed to carry 200 per cent of rated primary current in continuous service.

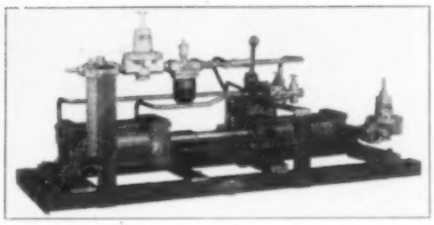
**The window opening** is 2 in. in diameter for all ratings to permit sufficient room for primary cable of maximum current capacity. The window also permits use of the transformer as a three-wire unit. When mounted on an adapter plate the new design meets dimensional requirements of EEI Specification MS-2 for low-voltage metering current transformers.

**The transformer core** is made of silicon strip steel secured to the base by a metal band. The secondary is wound with Formex copper wire after assembly of the core and base. The core and winding are pre-heated and placed in a mold into which uncured butyl is forced under controlled pressure and temperature. After the butyl has been cured the transformer is essentially complete, requiring only removal of excess flash and addition of secondary hardware and nameplate.

BREVITY—Identify by IEN - 10229 if you write the maker

## DISPENSING . . Pneumatic equipment delivers measured amount of grease

Source: J. N. FAUVER CO.
45 W. Hancock, Detroit 1, Mich.



**Gear housings** are filled with a measured amount of grease by application of this new assembly of pneumatic cylinder, control valve, measuring cylinder and pneumatic accessory equipment. The hand valve is operated to apply pressure in the pneumatic cylinder and move the piston in the measuring cylinder so it draws in grease from a connected source. Just prior to reaching the end of the intake stroke the movement actuates an adjustable stop operating a pilot valve and causes the hand-operated valve to return to initial position. This reverses pressure in the pneumatic cylinder and the grease that has been drawn in is discharged. The unit applies in filling grease into steering gear housings in a automotive assembly line. Operation is at 60 filled housings per hour.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10230 if you write the maker


KWIK-MIX Moto-Bug® FORK LIFT

FOR ONE-THIRD TO HALF THE COST of other industrial lift trucks, here is the Moto-Bug Fork Lift . . . has 1,000-lb. load capacity, and 2½-foot lifting height. Simple, power-driven hydraulic pump raises and lowers load. Forks are 20 in. long (30 in. optional) . . . quickly adjustable to 33-in. width for pallets, boxes, barrels, crates.

Weighing only 1400 lbs., Moto-Bug Fork Lift safely works over old warehouse floors, in elevators, on light ramps. Overall width is only 32 in. Turns around in its own length, has full speeds forward, reverse . . . climbs 20% ramps fully loaded.

At still lower cost, a 500-lb. cap. Fork Lift with manual hydraulic pump also is available. Both sizes are interchangeable with 1200-lb. flatbed, 10 cu. ft. hopper, and scraper blade.

Contact your Kwik-Mix distributor or write to us for bulletin.

KWIK-MIX CO. PORT WASHINGTON, WIS. (Koehring Subsidiary)


BREVITY—Identify by IEN - 10231 if you write the maker

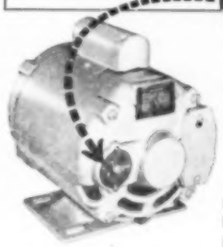

CONTROL POWER BETTER

ROCKFORD CLUTCHES


BREVITY—Identify by IEN - 10232 if you write the maker


Here's How You Can Reduce Costs . . .

Manual Reset Type



Specify and Use Motors with Built-in KLIXON PROTECTORS

Klixon Protectors in your motors are *one way* to keep today's rising operating and replacement costs down.

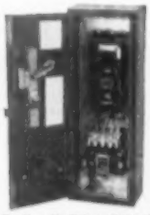
The Klixon Protector saves money and reduces idle machine time by preventing the motor from burning out. Here's how the Klixon Protector saves the motor — should the motor become dangerously overheated from overloads, high ambients, etc., the Klixon Protector snaps the power "off" preventing a possible burnout. When it cools to safety, the protector snaps the power "on" again automatically or by pushing the red button depending on the type of protector used. Temporary overloads do not cause nuisance tripouts.

*Remember, always specify Klixon Protectors on your motor purchase* orders for positive motor protection.

SPENCER THERMOSTAT
*Division of Metals & Controls Corp.*
210 FOREST ST., ATTLEBORO, MASS.


BREVITY—Identify by IEN - 10233 if you write the maker


ALLIS-CHALMERS COMBINATION STARTERS



SAVE SPACE...
SPEED INSTALLATION!

When you need both a magnetic starter and a safety switch for a motor, select an Allis-Chalmers circuit breaker-type combination starter. A neat installation can be made quickly . . . starter and switch are factory wired in a single enclosure to save you time and space.

You get a starter that has silver-to-silver double break contacts, non-carbonizing arc chambers and easily accessible renewable parts. The circuit breaker gives short circuit protection . . . serves as a disconnect switch.

These combination starters are available in sizes 0 through 5 for motors from fractional to 200 hp, 110-550 v. With fusible or non-fusible disconnecting switches they are also available up through size 3.

There is an Allis-Chalmers starter for every motor need. Bulletin 14B7132 describes manual, magnetic, combination, and reversing starters for 110-550 volt motors. Contact your nearby A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3498

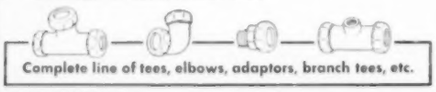
ALLIS-CHALMERS

BREVITY—Identify by IEN - 10234 if you write the maker

BREVITY—Identify by IEN - 10235 if you write the maker

## Speed pipe joining with *this*

There's no easier way to join pipe than with Dresser Style 65 Fittings. And they stay tight despite vibration and deflection. No threading to weaken pipe wall. Sizes ¾" to 2" pipe diameter. Write for STYLE 65 CATALOG.



Complete line of tees, elbows, adaptors, branch tees, etc.

**DRESSER** "NO-THREAD" FITTINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

BREVITY—Identify by IEN - 10236 if you write the maker

# FREE

**COST-CUTTING FACTS!**

**Booklet describes unusual multi-purpose thermostat**

If your processes involve control of heat, humidity, vapor level, radiant heat, pressure or other variables dependent on heat, it will pay you to investigate the fast, accurate, sensitive action of Fenwal low-cost THERMOSWITCH thermostats. Send for free booklet describing how Fenwal single-metal shell expands or contracts instantaneously with temperature changes, making or breaking totally enclosed electrical contacts.

Fenwal **THERMOSWITCH**®

The Precision, Multi-Purpose, Thermostat Control

SENSITIVE...*but only to heat*

FENWAL INC., 710 Pleasant St., Ashland, Mass.
111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers

MAIL TODAY

Please send me the Fenwal booklet "Everything you want in a thermostat."

Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 10237 if you write the maker

## COMMUNICATING . . Three speakers for company's standard sound projector

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.

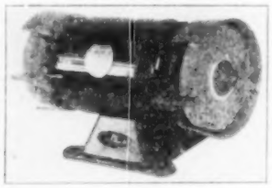
**Three outlets** can be added for sound projection to the single speaker unit supplied with the company's standard Pageant sound projector by means of this new three-unit assembly. It builds together in its three-part carrying case to make a single unit weighing 17 pounds. It separates into the individual units to be placed in a temporary installation.

**Each speaker unit** is an 8-in. size mounted in individual baffles. One is supplied with a 35-ft. cord and two with 45-ft. cords. When assembled, the carrying case will also enclose a 2,000-ft. reel for the required electric cable.

BREVITY—Identify by IEN - 10238 if you write the maker

## GRINDING . . Bench type machine, ball bearing, mounts two 6 in. wheels

Source: OAK ELECTRIC MOTORS INC.
751 Ells, Burr Oak, Mich.



**New grinder** employs one of the company's ½-hp. single-phase capacitor-start ball-bearing motors for operation at 3,450 rpm. The motor is mounted on a base and its shaft is extended at both sides. The extensions are ½-in. diameter with threaded ends and nuts to take 6-in. grinding wheels. The ball bearings are grease packed and sealed. The motor is dustproof, fan cooled and dynamically balanced. Tool rests are adjustable or removable. Equipment includes an 8-ft. extension cord and plug. Control centers at a toggle switch. Overall dimensions are 14½ by 6¼ by 8½ inches.

BREVITY—Identify by IEN - 10239 if you write the maker

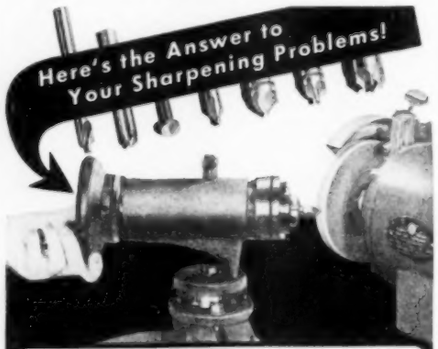
## MANAGEMENT . . Book on job evaluation describes procedure by "basic abilities" method

University of Wisconsin
404 Sterling Hall, Madison 6, Wis.

**Ralph W. Ells**, Chief Economist of Allen-Bradley Company, is author of new 92-page book, "The Basic Abilities System of Job Evaluation," list price $1.15. The book is Volume III-2 of Wisconsin Commerce Reports. It deals with job evaluation theories, job analysis, classification, grading, internal and external job pricing methods.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10240 if you write the maker




Patent No. 466-556

**The I.G.C. RELIEF GRINDER**

*Speeds Up Grinding Operations by as much as 300%*

★ Grinds radial relief on straight or spiral fluted cutters
★ Grinds *all* cutting edges equally
★ Keeps tools on the job longer between grinds
★ Fits all standard grinding machines

*For complete information please write*

WESTERN AERO INDUSTRIES
3305 BURTON AVE., BURBANK, CALIF.
Phones: CHarleston 0-8041 • ROckwell 9-2821

BREVITY—Identify by IEN - 10241 if you write the maker

MERRILL
# MATERIALS HANDLING DEVICES

**MERRILL BROTHERS**
56-14 ARNOLD AVENUE MASPETH, N. Y.

BREVITY—Identify by IEN - 10242 if you write the maker

# ORANGEVILLE HAND TRUCKS

**"Keep Loads Alive"**

Illustrated are a few of the many hand trucks we make for factory and warehouse use. They are typical of a wide range of available types and sizes which we can furnish in two-wheel and four-wheel designs. We also build special trucks to order to meet unusual handling needs.

*Write for Catalog 50*

FLOOR TRUCKS ORANGEVILLE

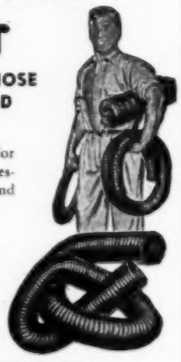
**ORANGEVILLE MFG. CO.**
ORANGEVILLE 15, PA.
*Established 1879*

BREVITY—Identify by IEN - 10243 if you write the maker

**FOR VENTILATION**
**FUME & DUST CONTROL**
**AIR CONDITIONING**

# FLEXAUST

**SPIRAL-REINFORCED HOSE LIGHT, STRONG AND VERY FLEXIBLE**



Flexaust is of proven suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL — EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.

Various Flexaust types, accessories, and other hose types also available:

BLOFLEX — Non-reinforced collapsible hose

PORTOVENT — Ring-reinforced retractable hose

*Write for full descriptive data and prices*

**AMERICAN VENTILATING HOSE CO.**
Dept. IE-10, 100 Park Ave., New York 17, N. Y.
Plant: Amesbury, Mass.

BREVITY—Identify by IEN - 10244 if you write the maker

## free

## MONEY-MAKING FACTS ABOUT TUFFLEX

These two folders are yours for the asking. They give technical facts and specifications about Tufflex—the fiber felt material that offers industry a rare combination of low thermal conductivity—effective shock absorption—vibration dampening—highly efficient cushioning—better protective padding. Tufflex is finding new uses among manufacturers who want to cut production costs and increase quality. Write now for descriptive literature and a sample of Tufflex. Wood Conversion Co., Dept. 126-101 First National Bank Bldg., St. Paul 1, Minn.

A PRODUCT OF WEYERHAEUSER

**TUFFLEX***

*REG. U. S. PAT. OFF.

BREVITY—Identify by IEN - 10245 if you write the maker

THE top name IN consumer fame!

LAUSON

**PORTABLE ENGINES!**

The recognized superiority of Lauson engineering and long-life performance carries a tremendous advantage to manufacturers of quality equipment. Important, too, is the fact that the Lauson name reaches almost 20 million consumers through advertising — a powerful sales weapon in selling better power equipment!

OUTBOARD MOTORS

LAUSON

PORTABLE ENGINES

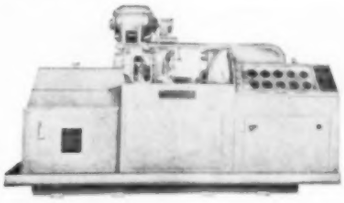
THE LAUSON COMPANY
NEW HOLSTEIN, WIS.
DIVISION OF HART-CARTER COMPANY

IN CANADA: HART EMERSON, WINNIPEG, CANADA

BREVITY—Identify by IEN - 10247 if you write the maker

## LATHE . . Single spindle automatic, five position turret, electric control

Source: CLEVELAND AUTOMATIC MACHINE CO.
4922 Beech St., Cincinnati 12, Ohio



**New design** of the company's Model-AB automatic machine, in both its 2½ and 3 in. bar-stock capacities, now provides a control panel with 10 dialed rheostats. A feed-calculation chart is included for pre-selection in stepless adjustment of the forward and return movements of each of the five turret positions. Feed rate can be changed for any turret tool while it is cutting. The feed drive mechanism has been simplified as compared to the design previously described IEN-1198-47. A new sheet-metal guard, including two swinging doors, provides access to the drive for maintenance purposes.

**The friction clutch** which controls feed and rapid traverse in the machine is shifted by a small hydraulic cylinder solenoid-valve actuated. The valve in turn is operated by a set of limit switches tripped by adjustable dogs on the shifting disc in the feed set-up. The dogs can be preset to a calibrated scale mounted on the shifting disc.

**Spindle speeds** total 112 between 24 and 1,820 rpm. to adapt the machine for any metal-cutting requirement. There are four automatic spindle-speed changes, both forward and reverse, for each set of change gears. The disc-type friction clutch in the spindle head is shifted by a small hydraulic cylinder in the same manner as the feed clutch.

**Two sizes** rate 2½ and 3½ in. in bar-stock capacity and provide turning lengths of 6 in. in both cases with stock-feed stroke of 10½ in. and longitudinal turret-head adjustment of 4 inches. The machines also can be set up for chucking operation in which case capacity is 6 in. in work diameter.

**Bulletin.** "Dialmatic Model AB", 8 pages, illustrates and describes the machine and provides major specifications.

BREVITY—Identify by IEN - 10248 if you write the maker

## PRESS TOOLS . . Aluminum plier to safely feed work to a punch press

Source: OSBORN MFG. CO.
304 Argonne Road, Warsaw, Ind.

**Type 06-1-DR3** designates new aluminum plier to keep an operator's hands out of the punch press as he feeds work pieces to the dies. In the event that the press is tripped accidently and catches the pliers, the soft aluminum crushes without damage to the die. The design shown in the illustration employs rounded jaws to grip parts at one side. Other designs are included in the line for given purposes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10249 if you write the maker

ORIGINAL BOWES COUPLINGS
• POSITIVELY LOCKED
• INSTANTLY CONNECTED

Pressure Seated
**AIR VALVES**
NIPPLES
FITTINGS
BLOW GUNS

All your airline requirements at one source

. . . Write for new catalog describing complete line.

THE UNITED STATES AIR COMPRESSOR COMPANY
5300 Harvard Avenue Cleveland 5, Ohio

BREVITY—Identify by IEN - 10250 if you write the maker

You'll find CASH-ACME Automatic Valves on the job in the giant meat industry. The sausage stuffer shown at right is just one application of many where a CASH-ACME Valve is giving dependable pressure control. If you have the problem of finding a lifetime valve that will turn in consistent performance year after year on the products you manufacture, write today. We can show you the installation that will do the job.

*Write for case histories showing the successful application of CASH-ACME Automatic Valves in dozens of industries everywhere.*

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 10251 if you write the maker

## IF YOU WORK WITH PLATE YOU NEED A STEELWELD PRESS

If you work with metal in any thickness from 12 gauge to one inch most likely a Steelweld Press would prove helpful and profitable to you.

Steelwelds are versatile tools that do bending, forming, drawing, punching, etc. quickly with simple, easily set dies.

*Send for free copy of catalog No. 2010.*

THE CLEVELAND CRANE & ENGINEERING CO.
4238 East 281st St. Wickliffe, Ohio

**STEELWELD PRESSES**

BREVITY—Identify by IEN - 10252 if you write the maker

*for the RIGHT answers to YOUR alloy fastening problems . . .*

## CALL HARPER!

**HARPER CAN HELP YOU...**

because Harper makes them *all*—has fastenings in exactly the *right* alloy, size, type and finish you need. Harper deals exclusively in nonferrous and stainless steel fastenings—bolts, nuts, screws, rivets and accessories in brass, bronze, copper, aluminum, Monel and stainless steel that provide maximum resistance to corrosion, heat, abrasion and stress. Over 7000 items in stock ready for delivery from warehouses and distributors, nationwide. Mail coupon for new catalog.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave., Morton Grove, Ill.
Send me copy of new Harper Catalog.
(Please print—use margin for more room)
Name.....
Address.....
City.....State.....

BREVITY—Identify by IEN - 10253 if you write the maker

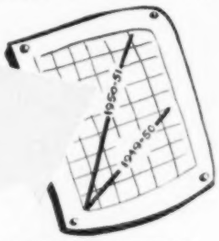
**FEATURES**

- COMPACT-SIMPLE-RUGGED
- 2 YEARS FIELD SERVICE
- EASILY ADJUSTABLE
- FORCE BALANCE TYPE OF POSITIONER
- AVAILABLE WITH OR WITH OUT BY-PASS
- USABLE AS REMOTE POSITION INDICATOR
- FOR DIRECT OR REVERSE ACTION VALVES

Write for Bulletin E-3500

**FISHER GOVERNOR CO.**
MARSHALLTOWN, IOWA

BREVITY—Identify by IEN - 10254 if you write the maker




WE'VE ADDED CAPACITY

TO HANDLE YOUR EXPANDED CIVILIAN AND WAR NEEDS

FOR SCREENS, STRAINERS, FILTERS

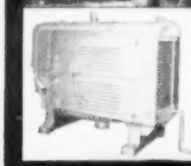
Production space has been increased by 100% and new modern equipment added giving new high standards in performance. Included in new equipment are special production machines that are particularly suited to do crimping and brazing required in strainers used in defense work. Storage space has been enlarged permitting handling of WIDER RANGES of monel and brass wire cloth and perforated metal. Send us your specifications for a speedy quote. Write for FREE Literature.

**PITTSFIELD PRODUCTS, Inc.**
ANN ARBOR, MICHIGAN

BREVITY—Identify by IEN - 10255 if you write the maker

**MM INDUSTRIAL ENGINES**

MODERATE SPEED
HEAVY-DUTY DESIGN



MM engines and power units are used in several sizes as original power installations for heavy and continuous service equipment. Standardization of many parts results in high production for finest quality, low cost per hp, and superior repair parts service. Design flexibility and standard SAE housings provide low-cost installations for any type of drive required.

Have your shovels, trenchers, graders, hoists, crushers, pumps, generators, and drill rigs equipped with MM POWER.

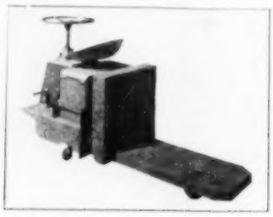
25-230 hp

**MINNEAPOLIS-MOLINE**
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 10256 if you write the maker

**TRUCK . . Power lift platform design, motor operated, 18 in. platform width**

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.



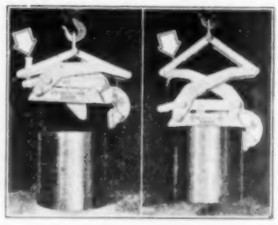
**New design** has been added to the company's Load-Mobile line of battery-powered electric lift trucks to provide a unit with a lift platform that is only 18 in. in width back of the 30 in. body width. The truck is available in lowered heights of 6, 7, 9 and 11 in. in four available steps.

**The main body** is fitted with stabilizing casters on the two sides. They contact the floor only if the truck is tipped. Heavy springs return the truck to normal position. The operator rides in a seat that can be faced to the front or rear. He also can stand on a folding platform. Load rating is 3,000 and 5,000 pounds.

BREVITY—Identify by IEN - 10257 if you write the maker

**HANDLING . . Toggle tongs for coils of steel to 35 ton weight**

Source: HEPPENSTALL CO.
4618-22 Hatfield St., Pittsburgh 1, Pa.



**New 10-ton size** has been added to the company's line of Automatic Safe-T-Tongs to lift, carry and pile coils of steel in a storage yard, safely without damaging their edges. Control centers in the automatic locking and unlocking action in the tong itself so a crane man can spot, engage, lift, lower, disengage from his position.

**The line** is available in ratings to 35 ton, the 15-ton assembly shown in the illustration being typical in the design to show the two gripping fingers and the operating toggle levers. The locking mechanism is indicated by an arrow.

BREVITY—Identify by IEN - 10258 if you write the maker

**GOVERNMENT . . Reference manual of United States Government departments and functions**

Superintendent of Documents
Government Printing Office, Washington 25, D. C.

**Revised 1951-52** edition of the "United States Government Organization Manual" is a 726-page book published by the National Archives and Records Service of the General Services Administration. It contains official statements by each Government agency in executive, legislative and judicial branches. Each is described as to organization and functions, its legal authority outlined, its key officials listed, addresses given. List price is $1. Please send your request direct to the Superintendent of Documents.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10259 if you write the maker

**the new APCO TORQUE WRENCH "CLICKS"**

No. PF 30
0-600 inch lbs.
Length 13"
Weight 1½ lbs.

. . . warns worker when preset tension is reached!



Apco Tension Drivers, available in four standard sizes. 0-25, 0-6, 0-12, 0-80 inch lbs. Interchangeable heads on two largest sizes.

Simplifies mechanical operations and eliminates "guesswork" on assembly and maintenance work — particularly in hard-to-get-places—wherever nuts, bolts, and studs require specific tensioning. Made with dial for accurate preset tension, this wrench makes a distinctly audible "click" when preset torque is reached. Unaffected by temperature change or jarring, guaranteed accurate. Apco Torque Tools—made of heat-treated nickel steel—are available in both visible and preset dial models—in sizes from zero to 280 inch grams., up to 2,000 ft.-lbs.

SEND FOR DESCRIPTIVE FOLDER TODAY!

**APCO MOSSBERG CO.**
161 LAMB ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 10260 if you write the maker

*America's first and finest*
**CROZIER TOOL POST TURRET**

*now with 12 position indexing*

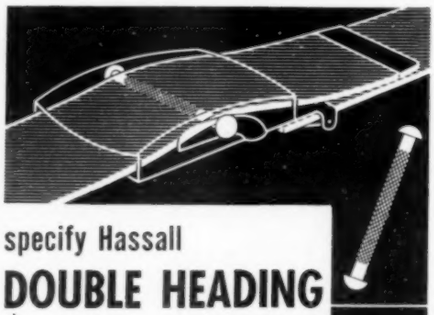
12 position indexing now makes possible the alignment with work at any thirty degree increment.

This is only one of the outstanding features developed by the first and largest manufacturer of turrets for small lathes. Other features include built-in cut-off tool and holder and positive rapid indexing. All wearing parts are hardened and precision fit. They are available in three sizes.

Switch to Crozier Tool Post Turrets today. Save as much as 75% set-up and down time in lathe operations. In Crozier, you have America's precision-built tool post turret. Write for catalog.

**CROZIER MACHINE TOOL CO.** Dept. IEN-10.
*Hawthorne, California*

BREVITY—Identify by IEN - 10261 if you write the maker



specify Hassall
**DOUBLE HEADING**
to meet your assembly's requirements

Your screw machine fasteners may be redesigned for production through our double heading method, with substantial savings. Illustration shows double headed part used as a belt buckle roller.

Inquiries promptly handled . . . ASK FOR FREE CATALOG . . . 3-color Decimal Equivalent Wall Chart.

**JOHN HASSALL, INC.**
132 Clay Street, Brooklyn 22, N. Y.
Hassall

BREVITY—Identify by IEN - 10262 if you write the maker

Save time! Prevent accidents!

**LIFT AND DUMP MECHANICALLY**

BAGS
BARRELS
DRUMS
BOXES

REDUCE HANDLING COSTS with a Cesco Dumper. It handles up to 100 loads per hour, has a lifting cap. ranging from 100 to 1500 lbs. Both single and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

**COLSON EQUIPMENT & SUPPLY CO.**
1317 Willow Street • Los Angeles 13, California

BREVITY—Identify by IEN - 10263 if you write the maker

## Natural Graphite licks "EXTRA TOUGH" lubricating jobs!

*Yes—for all equipment exposed to dirt, dust, moisture, the weather, and other tough conditions.*

You know how *ordinary* greases fall down badly on many really tough lubricating jobs. But pick out your toughest of tough lubricating jobs...outside, where there's rain, baking sun, dirt, dust. Try grease fortified with Dixon *Natural* Graphite—what a difference you'll see!

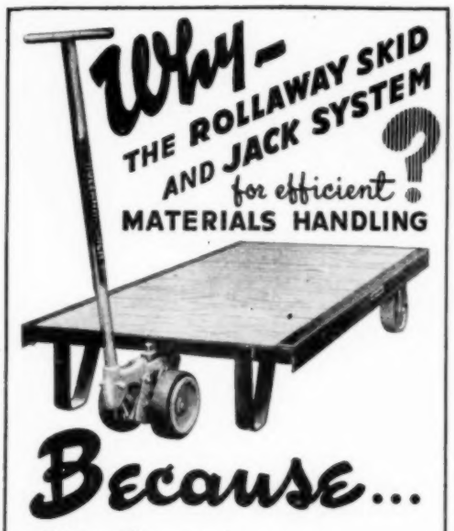
You get exceptionally effective lubrication from greases combined with Dixon Natural Graphite... *under the most adverse conditions.*

Dixon *Natural* Graphite is practically indestructible. Withstands temperature extremes and high pressures. Insoluble. Chemically Inert: unaffected by acids and alkalies.

***What is your toughest lubricating problem?*** Tell us the full particulars ... our technical department will analyze your problem and send you specific recommendations and a sample of the proper Dixon lubricant. No obligation. Write, Joseph Dixon Crucible Co., Jersey City 3, N. J.

**DIXON NATURAL GRAPHITE**

BREVITY—Identify by IEN - 10264 if you write the maker




## Because...

- ***It is Economical***
  One jack and ten skids cost no more than one hand lift truck and two skids or six four wheel warehouse trucks. And there is very little maintenance.
- ***It Saves Floor Space***
  Its right angle steer provides shortest turning radius to maneuver in the narrowest aisles and around machinery. Jack can be engaged or removed with only 18" of clearance. Skids may be stored on end or stacked, when not in use.
- ***It is Safe***
  Loaded skids will remain static on inclines or road truck bed. Balanced handle always up out of the way when load is elevated. Disconnecting action is foolproof.
- ***It Saves Time***
  Due to low cost of jack, it is convenient to have one at several handy locations.
- ***It is Versatile***
  Four standard widths of skids, with lengths to suit your load.
- ***It Has Been Proven***
  Rollaway semi-live skids and jacks have been time tested in modern plants the world over. It has all the features required for quality performance.

*Write for descriptive bulletin*

**LANHAM**
FOR LIFETIME
THE LANHAM COMPANY
1405 S. 12TH STREET • LOUISVILLE, KENTUCKY

BREVITY—Identify by IEN - 10266 if you write the maker

## THREADING . . Tapping head provides for free tap advance

Source: ERIC S. JOHNSON CO.
228-32 E. Ohio St., Chicago 11, Ill.

**Free movement** is provided by ball-bearing connection between the driving body and the driven tap holder in this new tapping head so the tap upon entering the work is free to advance axially. The tap will cut threads as good as those on the tap itself. The head also employs an adjustable friction clutch to release the drive at a predetermined torque so the head can be employed in bottoming work as well as in threading through holes.

**The head** can be operated at speeds to provide 300 fpm. in cutting light metal, 180 fpm. for brass and 90 fpm. for tool steel. Three sizes have tap capacity from $\frac{1}{16}$ to $\frac{1}{4}$ in., from $\frac{1}{4}$ to $\frac{5}{8}$ in., from $\frac{7}{16}$ to $1\frac{1}{8}$ inch. Overall length including the shank is $5\frac{1}{2}$ to 11 inches. Greatest diameter is $1\frac{3}{4}$ to 4 inches. Weights are $1\frac{1}{8}$, $4\frac{5}{8}$ and 13 pounds. The taper shanks are Nos. 1, 3 and 4 standard Morse taper.

BREVITY—Identify by IEN - 10267 if you write the maker

## PROTECTING . . Plastic covers for idle machines and equipment

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.

Maroon in color
stitched edges

**Service Cover** designates a new plastic bag-type enclosure to drop into place over a machine or unit of shop equipment to protect against dripping water and dirt in the air. Six sizes are minimum at 12 by 28 by 28 in. and maximum at 38 by 96 by 25 inches.

BREVITY—Identify by IEN - 10268 if you write the maker

## DISPENSING . . Cellophane tape unit holds tape, also rolls up dirt and lint

Source: PERMA PRODUCTS CO.
P. O. Box 25-A, Linwood Station, Detroit 6, Mich.

**NuPal** is a new handle-equipped roll-type dispenser to take rolls of cellophane tape measuring $\frac{3}{4}$ or $1\frac{1}{2}$ in. in width by 360 in. in length. The tape can be dispensed as required for sealing and holding purposes. It also wraps around the center rolling section so the dispenser can be employed to pick up surface dirt and lint. The roll cleaning action leaves no smudges on the surface. List price is $1. The tape lists at 39 cents or 66 cents in the two widths.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10269 if you write the maker

The success of your safety program depends on workers actually wearing their goggles. All-plastic Eye-Savers can help you get the worker cooperation you need. Their comfortable fit, good looks and great impact resistance make them popular with workers everywhere. Available from your safety supplier in many different models to meet all eye hazards. Model 1N (square shape shown above) features wide angle vision and maximum ventilation.

**FREE!** *Send for magazine article giving impartial advice on best uses of plastic eye protection. Eye-Savers catalog also included.*

**WATCHEMOKET OPTICAL CO., INC.**
DEPT. 7, PROVIDENCE, RHODE ISLAND
*Producers & Originators of Practical Plastic Eye Protection*

BREVITY—Identify by IEN - 10270 if you write the maker

*today's best buy is better air!*

*Type D ROTO-CLONE exhausting one battery of five tooth-grinders at the E. C. Atkins Co.*

## METAL DUST CONTROL
... for millions of teeth!

ROTO-CLONE'S flexible unit system corrected a critical condition for this well known saw manufacturer. Grinding and polishing millions of saw teeth create complex dust problems typical of many metal working operations. Type D ROTO-CLONES provide complete dust control at each source. These small ROTO-CLONES with viscous after-cleaners, also allow recirculation of cleaned air with consequent seasonal heat saving.

Write today for Engineering Bulletin No. 272.

**AAF American Air Filter COMPANY, INC.**
533 Central Ave., Louisville 8, Ky. • In Canada: Darling Bros., Ltd., Montreal, P. Q.

BREVITY—Identify by IEN - 10271 if you write the maker

YOUR
## BEST PROTECTION FOR FLAMMABLE LIQUID, GAS AND ELECTRICAL FIRES
DRY CHEMICAL
## ANSUL FIRE EXTINGUISHING EQUIPMENT

MODEL 30-B

Fire Chiefs, insurance inspectors, safety engineers, etc. recognize Ansul as the leader in the dry chemical extinguisher field. Ansul Fire Extinguishing Equipment and *"PLUS-FIFTY"* Dry Chemical have set unparalleled standards of quality for the fire extinguisher industry.

You get *complete* dry chemical fire protection only from Ansul. There is an Ansul Dry Chemical Fire Extinguisher of the proper size for almost every flammable liquid, gas and electrical fire hazard.

Safeguard your plant and irreplaceable equipment with the *BEST* fire extinguishing equipment available. Protect them with ANSUL EXTINGUISHERS.

Send for File No. 759. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

**ANSUL CHEMICAL COMPANY**
*Fire Extinguisher Division*
MARINETTE • WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 10272 if you write the maker

## Get This Super-Handy HOIST and PULLER for 30-day Free Trial!

The *Jiffy Lift* Hoist & Puller weighs only 12 lbs., yet has ¾-ton capacity. Single control for up and down. Quick action, ratchet-type. Thousands of enthusiastic users. **$45.00 F.O.B. St. Louis.** Try it a month FREE!

**BLACKBURN *Jiffy Lift***
Lightest! Simplest! Fastest!
HUNDREDS OF USES

MAIL COUPON TODAY
JASPER BLACKBURN CORPORATION
35 Madison St., St. Louis 6, Mo.
☐ Send us full information about "Jiffy Lift".
☐ Send us one "Jiffy Lift" for 30 Day FREE TRIAL.
Your Name and Title _____
Firm _____
Address _____
City and State _____ IEN

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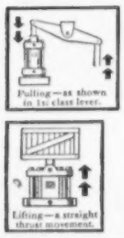
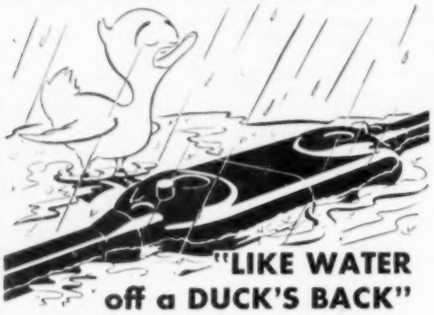
Rasslin' with HIGH COSTS?
SAVE on "MUSCLE JOBS"
with T-J CYLINDERS




Air or hydraulic power—applied by T-J Cylinders—gets an amazing lot of tough jobs done for industry . . . *faster, more efficiently,* and at *lower cost!* Use T-J Cylinders for a wide range of pushing, pulling, lifting, clamping or control jobs . . . 100 lb. or 50,000 lb. Many standard sizes and styles . . . both cushioned and non-cushioned types . . . precision-built, dependable. Write . . . The Tomkins-Johnson Co., Jackson, Mich.

35 YEARS EXPERIENCE
TOMKINS-JOHNSON

BREVITY—Identify by IEN - 10274 if you write the maker



"LIKE WATER off a DUCK'S BACK"

Moisture cannot penetrate the resilient rubber body of a JOY electrical connector . . . even mating pins and sockets are fully protected (when connected). Sealing action between plugs and sockets is automatically completed each time connections are made—through patented face construction of connectors.

Molded as integral Neoprene rubber units and permanently vulcanized to their cables—JOY plugs and inserts can't crack or shatter and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes. All the outstanding advantages of wear-resistant rubber are engineered to peak performance in JOY connectors. Write for descriptive bulletins. 749.2

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

1851-1951—100 Years of Engineering Leadership

BREVITY—Identify by IEN - 10275 if you write the maker

IT'S ALLIED FOR RCA
electron tubes for industry

ALL TYPES IN STOCK
- Vacuum Power
- Thyratrons
- Vacuum & Gas. Rectifiers
- Ignitrons
- Cold-Cathode
- Phototubes
- Oscillograph Tubes
- Camera Tubes
- Monoscopes
- Special Types

Quick, Expert Service on all RCA special-purpose industrial tubes

ALLIED maintains in stock *for quick shipment,* the world's largest distributor inventory of RCA special-purpose tubes—*of all types.* We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for *quick* shipment. Fill *all* your needs from the *complete, dependable* electronic supply source.

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Valuable guide to selection of proper RCA tube type replacements. Lists 1000 tube types. Write for Free RCA Guide No. 37-040.

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Refer to your ALLIED Catalog for *all* electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available from the world's largest stocks. Write today for your FREE copy of the *complete* 212-page 1952 ALLIED Catalog.

ALLIED RADIO
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Chicago 7, Ill.

Everything in Electronics from ONE Source

## For Your Special Information

### ALL MAKERS ARE LISTED — IEN S-34

**The 1951 edition** of Thomas' Register has been sold out for the past two months as we have reported to you. Unfortunately it has been necessary to turn back a considerable number of orders from plant men who want books for product-source reference. No orders can be filled until the first of 1952.

**In the mean time** we hold our office copy available for anyone who wants the names of makers and their addresses for any products no longer available from previously established sources. Just name the product or products in which you are interested and give us your name and connection. We will check through the pages where "all makers of all products" are listed and will give you the information.

### BINDER FOR IEN — IEN S-35

**A binder** to hold twelve issues of IEN is available on direct order to Sendor Bindery Inc., 129 Lafayette St., New York 13. The price is $3.10 plain or $3.25 with Industrial Equipment News stamped on the front cover. Send your check or money order to the company, not through us.

### IEN ON MICROFILM — IEN S-36

**Recently we saw** a sample of the microfilm on which all of the pages of IEN for 1950 have been reproduced. It is a 35-mm. film on a reel about four inches in diameter. It is a nice little job, ready to be threaded into a viewer. It costs $3.50. If you want one, address University Microfilm, 311-15 N. First St., Ann Arbor, Mich., with check or money order.

### U. S. SAVINGS BONDS — IEN S-37

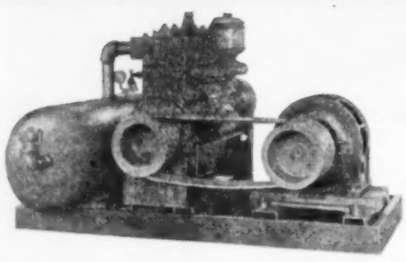
**Our Government** is again in the market offering an issue of U. S. Savings Bonds. It is a new effort to minimize inflation by persuading everyone to put dollars away on the saving shelf instead of using them to compete for purchase of short-supply high-priced goods.

**Favorable action** on your part will fortify you through access to quick cash at some future date even though the value of the individual dollar may be lower than it is now. Spend those dollars instead for the things available today and you can easily fall into a very deplorable hole when the bottom drops out of short-supply demand.

Top Management:
YOUR BOOST
IS NEEDED MOST

BREVITY—Identify by IEN - 10276 if you write the maker

SCHRAMM Unistage AIR COMPRESSOR



ON BASE WITH MOTOR AND HORIZONTAL RECEIVER

SCHRAMM "V" Belt Drive On Base compressors are built for 24-hour continuous service with the least up-keep and operating cost. Built in sizes ranging from 1/2 to 100 h.p. Write for Catalog 5110.

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

BREVITY—Identify by IEN - 10277 if you write the maker

Only Thorough Engineering and Adequate Sizing Can Give You Pritchard Quality!

New Pritchard Type "B" QUINTAIR*
Air Cooled Heat Exchanger

Pritchard *quality* means a lot when it comes to selecting air cooled heat exchangers. Take Pritchard's Type "B" Quintair* for example. All parts requiring attention are readily accessible and easily serviced. Thoroughly engineered for long life and operating economy—adequately sized for top performance under the most exacting conditions—the Pritchard Type "B" Quintair* can handle one or several different heat loads in a single compact unit. Whatever your cooling problem, it will pay you to investigate the Pritchard Type "B" Air Cooled Heat Exchanger. *Write today for full information.*

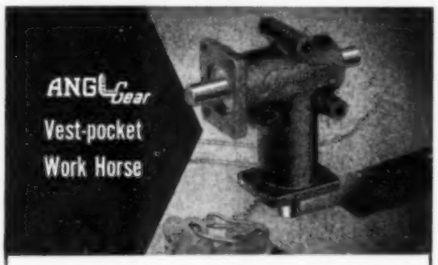
*Registered Trade Name

Gas & Air Treating
Specialized Heat Exchangers
Cooling Towers

J. F. Pritchard & Co.
EQUIPMENT DIVISION
Dept. No. 171 908 Grand Ave. Kansas City 6, Mo.

District Offices: CHICAGO • HOUSTON • NEW YORK • PITTSBURGH
TULSA • ST. LOUIS • Representatives in Principal Cities from Coast to Coast

BREVITY—Identify by IEN - 10278 if you write the maker




Look at the features of these unique standardized right-angle bevel gear drives:

- Capacity of equipment many times their size and weight
- Suitable for manual or power-operated systems
- High load capacity, long service life, and neat appearance in a compact design.
- Two basic models meet requirements of almost all applications
- Ratio 1:1 in 1/3 hp and 1 hp at 1,800 rpm with ultimate static torque of 250 and 750 in. lbs. respectively

CHECK THESE FEATURES . . .

| | |
|---|---|
| √ | Hardened gears |
| √ | Antifriction bearings |
| √ | Flanged end mountings |
| √ | Three bolt side mounting |
| √ | Internal pilot on mounting ends |
| √ | Lubricated for life |

SOLD THROUGH LEADING DISTRIBUTORS THE COUNTRY OVER

AIRBORNE ACCESSORIES CORPORATION
Note our new address 1414 Chestnut Avenue Hillside 5, New Jersey

BREVITY—Identify by IEN - 10279 if you write the maker

this new WELDING DESIGN MANUAL FREE! FOR THE ASKING

To assist you in your re-tooling problems . . . or to help you analyze your present welding methods so that you may enjoy maximum speed, efficiency, and economy in many of YOUR production problems...

Over 40 pages of helpful data covering basic and advanced welding techniques and designs used in fabricating and assembly. Profusely illustrated with scores of application drawings; weld diagrams; tables containing latest information on melting temperatures, tensile strengths, corrosion factors; charts; alloy recommendations; etc. Convenient digest size.

**This just-off-the-press book is "must" reading for anyone engaged in defense production and design, and will certainly be time profitably spent for any production man.**

SEE . . . The unbelievable savings in metal-joining which can now be yours through the use of "Low Temperature Welding Alloys" ® discovered a few years ago and now used in over 78,000 industrial plants throughout America for more efficient metal-working production as well as for salvaging irreplaceable tool and machine parts.

Over 100 different, new, EUTECTIC Low Temperature WELDING ALLOYS® and EUTECTOR® Fluxes are job-engineered for use on ALL metals—cast iron, alloy steels, aluminum, copper and nickel alloys, die castings, overlays, etc., and may be applied with ALL heating methods—torch, arc, furnace, induction heating, etc.

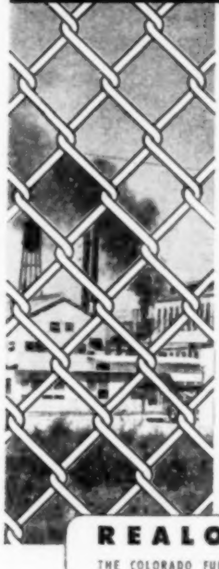
SEND FOR YOUR COPY TODAY!

EUTECTIC WELDING ALLOYS CORPORATION
172nd Street of Northern Boulevard • Flushing, New York, N. Y.

▼ BREVITY—Identify by IEN - 10280 if you write the maker ▼


REALOCK FENCE

GIVES *Positive* PROTECTION


Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION
Denver, Colorado

THE CALIFORNIA WIRE CLOTH CORPORATION
Oakland, California

WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES


▼ BREVITY—Identify by IEN - 10281 if you write the maker ▼


Only genuine RIDGID guarantees economy

RIDGID Booths
918-920-922
at the Plant Maintenance Show—
Cleveland
Jan. 15-18

This Work-Saver RIDGID assures you . . . "No pipe wrench housing repair expense."

● You'll find no substitute for the smart-working, long-lasting qualities that have made RIDGID the world's most popular pipe wrench. Breakproof housing, full-floating hookjaw with handy pipe scale, replaceable heeljaw, adjusting nut that spins easily in all sizes, 6" to 60", comfort-grip handle—these plus the RIDGID name mean more service and tool satisfaction for your money. Buy at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO


▼ BREVITY—Identify by IEN - 10283 if you write the maker ▼

## CONVEYING . . Vibrating trough unit for dry, wet, hot or cold materials

Source: GOODMAN MFG. CO.
4896 S. Halsted St., Chicago 9, Ill.

**Forward thrust** alternating with a quick return stroke through a maximum amplitude of 9 in. provides the vibrating or oscillating action in this trough-type conveyor. It will forward fine or bulky materials along the trough in level, upgrade or downgrade installation. Normal capacity is 110 ton per hour. Overall distance per conveyor unit is to 500 feet.

**The conveyor** is available in 10, 15 or 20-hp. electric drive, 15 and 25-hp. pneumatic drive. Trough width ranges from 12 to 36 in. with section lengths from 6 to 16 ft. and depth from 6 to 18 inches. An installation is laid out on a straight line or a 90-deg. angle trough is used to turn the flow.

**Initially** developed some years ago for use in underground mines, the equipment has found use in steel mills and foundries. It now is offered by the company for general application in installations where abrasive materials, hot, wet, fine or bulky, constitute the handling problem.

**The driving unit** and its motor are mounted on a steel skid plate with working parts enclosed in a steel frame that forms an oil-tight reservoir. Rotating shafts ride in ball bearings with rocker shafts mounted in brass bushings. The internal parts are splash lubricated. External bearings are equipped with pressure lubricating fittings.

▼ BREVITY—Identify by IEN - 10284 if you write the maker ▼

## INSULATING . . Silica material in bulk, batts, fabric, core, sleeves

Source: H. I. THOMPSON CO.
1731-35 Cordova St., Los Angeles 7, Calif.

**Refrasil** trade names a vitreous silica material originally developed by company for thermal insulation in jet-propelled aircraft to protect against temperatures to 1,800 deg. F. The material is now available as woven cloth and tape, cordage and sleeving, in addition to bulk and batt forms for thermal and electrical insulation, for use as a filter element to handle corrosives and high temperature liquids, as a catalyst or catalyst support, or ion exchanger.

**Fiber diameter** is 0.0002 to 0.0004 inch. Specific heat is 0.19. Nominal thickness of the batt is $\frac{1}{2}$ inch. Surface density is 0.05 lb. per sq. foot. The company is prepared to supply detail technical information to answer specific questions.

**Note . .** We call your attention to our error in describing this company's portable equipment to spot weld metal foil and screen used in constructing insulating Refrasil insulating blankets in IEN-7418-51. We quoted the foil thickness at 0.044 in. and should have stated 0.004 inch.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . .* *See Page 50*

▼ BREVITY—Identify by IEN - 10285 if you write the maker ▼


another new Variac® SPEED CONTROL
for ½ HP D-C Motors from A-C Lines

Type 1700-B
VARIAC Speed Control
$165.00

Selenium Rectifier — *no waiting for vacuum tube to warm up — not necessary to idle rectifier for instant starting — practically indefinite rectifier life under ordinary operating conditions.*

Uses Standard ½ HP Compound or Shunt Motor

Instant Starts—Extra Fast Stops *with dynamic braking*

Single Switch *conveniently located for "Forward", "Stop" and "Reverse"*

Continuously Variable Speed Range *down to zero at constant torque*

Negligible Torque Pulsation

Excellent Regulation

Quick Starting under Heavy Loads

*Write for VARIAC Control Bulletin*

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Massachusetts
*90 West Street* NEW YORK 6 — *920 S. Michigan Ave* CHICAGO 5 — *1000 N. Seward St.* LOS ANGELES 38


▼ BREVITY—Identify by IEN - 10286 if you write the maker ▼


GET THE FACTS NOW ON THIS REVOLUTIONARY NON-SLIP FLOOR PLATE

A. W. ALGRIP Eliminates Costly Slipping Accidents

- A. W. ALGRIP is the one and only Abrasive Rolled Steel Floor Plate in the World.
- Wet or dry it prevents slipping!
- Even on steep inclines A. W. ALGRIP won't let you slip.
- A. W. ALGRIP has over 1001 plant and product applications.
- Easy to install, A. W. ALGRIP never requires maintenance.

THERE IS NEVER A SLIP—ON A. W. ALGRIP

Free 8-Page Booklet giving all the important data you need on A. W. ALGRIP. Write for booklet B-3.

A. W. ALGRIP
ABRASIVE ROLLED STEEL FLOOR PLATE

Product of ALAN WOOD STEEL COMPANY
Conshohocken, Penna.
125 Years of Iron and Steel Making Experience

Send me a copy of your 8-page A.W. ALGRIP Booklet B-3

Name________
Title________ Company________
Address________
City________ Zone____ State________

Other Products: PERMACLAD Stainless Clad Steel • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloys and Special Grades)


▼ BREVITY—Identify by IEN - 10287 if you write the maker ▼

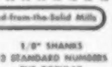

Severance CARBO-MILLS GROUND-from-the-Solid

The all-purpose CARBIDE mill at LOW cost. Use them same as you would High Speed mills or Rotary Files — Same machines — Same speeds (or higher). No more, time consuming, "kid-glove" care. Just chuck them up in your regular equipment and watch these RUGGED CARBO-MILLS go to work!

SOLID CARBIDE CUTTING HEADS

CARBO-MILLS ASK NO SPECIAL FAVORS

3/32" SHANKS
7 Standard Numbers, featuring REAL cutting teeth to remove stock faster over long periods of use—as well after regrinding as when new.

IN PORTABLE TOOLS

CARBO-MILLS by the ORIGINATOR of Ground-from-the-Solid Mills

1/8" SHANKS
13 STANDARD NUMBERS
THE POPULAR WORK BENCH SET

NO PROBLEM OF TOOTH CHIPPING OR BRAZE-FAILURE

CARBO-MILLS PREFERRED BY OPERATORS!

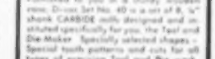
IN MACHINE TOOLS

1/4" SHANKS
20 Standard Numbers (only 9 illustrated) cover the widest possible range of uses. Don't continue losing valuable time and money; replace your less efficient Rotary Files with these longer lasting, faster cutting, stemless possessing, CARBO-MILLS at the earliest possible moment!

20 STANDARD NUMBERS

LAST UP TO 75 TIMES LONGER THAN ROTARY FILES OF HIGH SPEED

DIE MAKERS! ASK FOR THIS SET


Furnished to you in a sturdy wooden case, Die Set No. 40 is a set of 8, ⅛" shank CARBIDE mills designed and instituted specifically for you, the Tool and Die Maker. Specially selected shapes — Special tooth patterns and cuts for all types of precision Tool and Die work. You will ply your skills easier and faster than ever before with these personal finishing mills. These CARBIDE mills need absolutely no coddling and will win their way to the the most favored spot on your Work Bench! Send for complete information and prices today! Ask for leaflet No. 445

--- GROUND from the Solid ---

REGRINDING – Due to CARBO-MILLS being made of Solid Carbide repeated savings are made possible through successive regrinds.

INVESTIGATE NOW!
FOR COMPLETE INFORMATION AND PRICES SEND FOR BULLETIN CM.

SEVERANCE TOOL INDUSTRIES, INC.
740 Iowa Ave., Saginaw, Michigan


▼ BREVITY—Identify by IEN - 10288 if you write the maker ▼


C-136-A Series.
Roller Bearing
Celoron Wheels.

√practical Design
√sound Construction
√proved Performance

Design — construction — performance . . . these are the watchdogs that govern the building of every Bond 36-A Caster.

Bond 36-A Series Casters are among the most popular swivel casters used throughout industry. Fork, base and king bolt construction distributes the load evenly. The double ball race is pressure lubricated for easy swiveling.

Send for a copy of Bond Catalog K-38; it includes information on *all* Bond Casters . . . write today.

BOND FOUNDRY & MACHINE CO.
MANHEIM, PA.

Bond®
built-for-the-job
36-A SERIES
CASTERS

136-A Series. Equipped with Roller Bearing Semi-Steel Wheels.

BREVITY—Identify by IEN - 10289 if you write the maker

# New Free Booklet

## Shows How to Select Proper Lubrication Equipment For Every Industrial Need

This profusely illustrated 48-page catalog tells how to simplify lubrication procedures, slash costs, increase production and profits. Packed with helpful facts about Alemite equipment for transferring, loading, and applying lubricants—plus information on ALEMITE FITTINGS and accessories. Write today for your free copy. Ask for Form 22-230. Alemite, Dept. K-101, 1850 Diversey Parkway, Chicago 14, Ill.

**ALEMITE**
MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

A PRODUCT OF SW STEWART WARNER

BREVITY—Identify by IEN - 10290 if you write the maker

# Reduce costs 2 ways

## with Brown & Sharpe Cutters

- More output between sharpenings
- Smaller replacement inventory

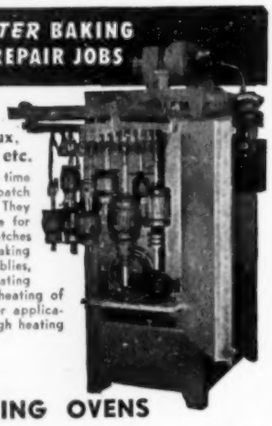
Precision-made to the highest standards of cutter design, Brown & Sharpe Cutters cut faster, more freely, and with less frequent resharpening. They eliminate the need to maintain a large investment in replacement cutters. Write for complete catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

*We urge buying through the Distributor*

**BROWN & SHARPE** BS

BREVITY—Identify by IEN - 10291 if you write the maker

# 50% FASTER BAKING ON REPAIR JOBS



**Ideal for Synthetic Films, Dulux, Lacquer, Enamel, etc.**

You can often cut baking time up to 50% with Despatch R S Batch Type Ovens. They are extremely adaptable for finish baking of small batches such as armatures; for baking paints on grills, assemblies, etc.; for drying, dehydrating or core baking; for preheating of plastics, and many other applications where fast, thorough heating is required.

## DESPATCH R S Batch Type FINISH BAKING OVENS

They're shipped fully erected and do not require an engineer to set them up. Gas or oil fired, very economical, with working range from 200° to 500° F. Automatic heat control for desired uniform temperature. Sizes from 11 to 90 cu. ft capacity, all easy to load and unload. When writing for literature, kindly tell us what type of work you have.

*Write for Bulletin on R S Ovens.*

**DESPATCH** OVEN CO. Established in 1902

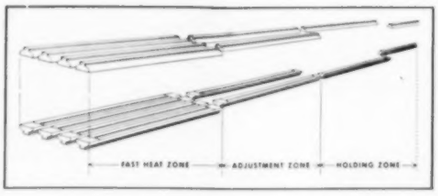
*Manufacturers of ovens for:* Paint Finishing, Dehydrating, Curing, All Industrial and Laboratory Applications

337 DESPATCH BLDG., MINNEAPOLIS 14, MINNESOTA

BREVITY—Identify by IEN - 10292 if you write the maker

## DRYING . . Infrared elements to cure latex foam sponge rubber

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.




**New arrangement** of the company's standard design of electric radiant-heating elements provides controlled action in a curing oven for latex-foam sponge rubber. The oven is 42 ft. in length. It is divided into zones for fast heating to 250 deg. F., for adjustment and for holding.

**Eight elements** are employed in the first zone, four in the next and sets of two, one above and one below the work, in the final zone. Capacity is 25 molds per hour. Thirty of the elements, each rating 1.8 kw., are employed.

BREVITY—Identify by IEN - 10293 if you write the maker

## TRUCK . . Electric power lift unit, fork and platform, 1 and 2 ton ratings

Source: BARRETT-CRAVENS CO.
4609 S. Western Blvd., Chicago 9, Ill.

**Four new units** have been added under the trade name Hi-Lift to the company's Power-Ox line of electric trucks for control by an operator walking beside the machine. Telescopic tilting design is shown in the illustration. It provides a total lift of about 121 in. and capacity at 1 ton on 24-in. load centers. A companion unit, also fork design but without the tilting action, raises a load to a little over 61 inches. It rates 1 ton on 24 inches. A straddle-type fork unit is the third new design. It has a lift height of 68 inches and rates 2 ton on 30 inches. The fourth assembly is a platform truck to raise a 2 ton load to 72½ in. above the floor line.

BREVITY—Identify by IEN - 10294 if you write the maker

## ISOLATING . . How to isolate equipment from vibration and shock described in new textbook

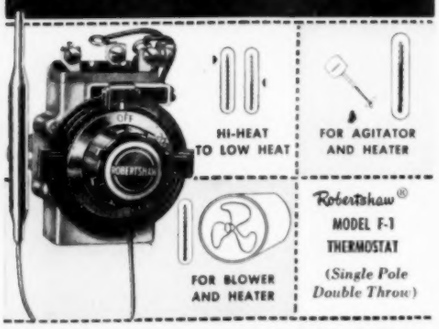
John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

**Author** of new 328-page "Vibration and Shock Isolation" is Charles E. Crede, Chief Engineer of the Barry Corporation. His book, list price $6.50, is intended as a reference on design and application of resilient mountings. First four chapters cover theory and principles, the next two design and materials, the last specific applications on a variety of equipment.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10295 if you write the maker

# A 2 CIRCUIT THERMOSTAT FOR A THOUSAND USES—




When two heating elements are used, high heat element is automatically cut in when thermostat calls for heat. When set temperature is reached, main contacts are automatically broken and low, or holding temperature element is cut in to function until drop in temperature again calls for heat. *Write for catalog.*

*In Home and Industry* EVERYTHING'S UNDER CONTROL

**Robertshaw** THERMOSTAT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
YOUNGWOOD, PENNSYLVANIA

BREVITY—Identify by IEN - 10296 if you write the maker

# *Why does an* ARIDIFIER

**REMOVE 92% OIL, WATER AND DIRT FROM GAS AND AIR LINES?**

**STUDY EXPLODED VIEW FOR ANSWER**
Four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

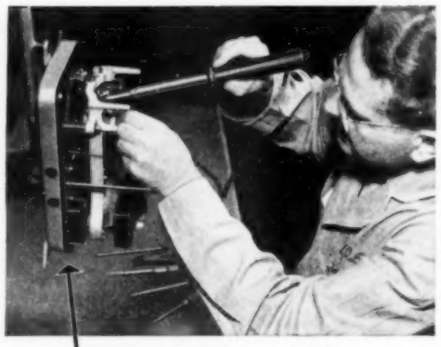
For paint and lacquer spraying, ceramic, sand blasting, air cleaning, etc. Easily replaces less efficient baffle type devices. Tell us details of your problem when you write for a catalog.

CAPACITY RANGE: AS LOW AS 7 CFM TO 17,000 CFM.

Made By The Manufacturers of Logan Lathes and Shapers.

**Logan** ENGINEERING CO.
4902 W. LAWRENCE AVE., CHICAGO 30, ILL.

BREVITY—Identify by IEN - 10297 if you write the maker



from INSTRUMENTS to ARMATURES

# American Beauty

## SOLDERING IRONS *for* PRODUCTION JOBS LARGE or SMALL!

WRITE FOR DESCRIPTIVE CATALOG PAGES.

*dependable · durable · efficient · since 1894*

**AMERICAN ELECTRICAL HEATER CO.**
DETROIT 2, MICH.

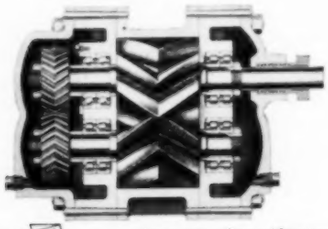
BREVITY—Identify by IEN - 10299 if you write the maker

## WARREN-QUIMBY ROTEX PUMPS are *Versatile*

For pumping lubricating, non-lubricating and viscous liquids such as acids, alkalis, coolants, diesel oil, dyes, fuel oil, gasoline, inks, lube oils, molasses, paints, paraffine, shellac, solvents, syrup, tar, varnishes and many other liquids.

TWO GENERAL TYPES AVAILABLE: Gear-in-head for clear liquids having sufficient lubricating qualities to protect driving gears and bearings. External gear and bearing for non-lubricating liquids, such as gasoline, heavy tars, asphalts, acids, etc.

Warren Plant Facilities, Dependability, Quality and Service now behind WARREN-QUIMBY Pumps.



Your inquiries on Rotex and Screw types, as well as Warren's complete line of Centrifugal and Reciprocating Pumps are solicited.

IEN-6

WARREN QUIMBY PUMPS

**WARREN PUMPS**

WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

BREVITY—Identify by IEN - 10300 if you write the maker

**DELIVERS MOST GALLONS OF CLEANING SOLUTION PER HOUR**

## KELITE

*High-Volume* **STEAM CLEANER**

Model for model . . . size for size . . . Kelite Steam Cleaners deliver more gallons of cleaning solution per hour than any other steam cleaners made today. High-volume-output is the reason why the KELITE outcleans all other makes.

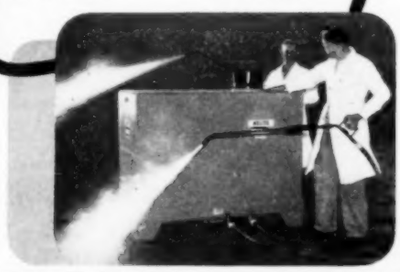
**PATENTED FEATURES**

- *Aerated Gun Grips. No gloves needed*
- *Safety Fuel Shut-off. No danger from water or power failure*
- *Hy-Vol Nozzle concentrates steam on area being cleaned*

WRITE FOR ILLUSTRATED FOLDER

**KELITE PRODUCTS, INC.**

Los Angeles 54, Calif. · Box 2917 Terminal Annex
Chicago 45, Ill. · 1401 Touhy Ave.
Baltimore 11, Md. · 936 Fell Street



BREVITY—Identify by IEN - 10301 if you write the maker

The New *Hoffman* ELECTRONIC SAFETY GUARD gives you

- INCREASED PRODUCTION
- LOW MAINTENANCE COST
- NO OPERATOR FATIGUE
- NO ACCIDENT TIME-LOSS

**New Electronically Controlled SAFETY and BARRIER GATE GUARD brings benefits to both management and workers**

YOU can increase your plant power press production immediately with installation of the Hoffman Safety and Barrier Gate Guard. It gives the operator greater assurance, eliminates fatigue and accident time-loss. It will give higher and smoother production per man hour.

The Hoffman Guard is an electronically controlled guard consisting of four major parts—Light Source and Photo Cell Assembly — Amplifier — Magnetic Treadle Control — Non-Repeat Micro Switch. The Barrier Gate Guard is an auxiliary unit and is used as a double safety precaution.

HOFFMAN ENGINEERING CORP.
Department 4-1 • Anoka, Minnesota

Please send free details about the Hoffman Electronic Safety Guard.

Name_____
Address_____
City_____ State_____

HOFFMAN ENGINEERING CORPORATION
ANOKA, MINNESOTA
*Electronic Controls for Industry*

BREVITY—Identify by IEN - 10302 if you write the maker

## THERMOMETER . . Cup mounted unit for immersion in liquid storage tanks

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.

**Model 8652** is a new assembly of wood-backed thermometer with its bulb centered in a cup measuring 1¾ in. in diameter and holding 100 ml. of liquid. At the top of the assembly is a handle for attachment to a suitable cord or chain so the thermometer can be lowered with its cup through a 2-in. gage pipe in a liquid storage tank. This permits taking temperatures at desired depth and at the same time encloses the thermometer bulb in a sample of the liquid at that depth to prevent change in reading during the time required to raise the thermometer to the top of the tank.

**Overall length** is 16 inches. Two available scale ranges are 0 to 180 deg. F. and minus 30 to 120 deg. F. Both scales have one-deg. graduations. The instrument conforms to ASTM requirements. The cup and backing are made of non-sparking metal. Primary application is in connection with petroleum storage to determine volume of the oil based on variation from a standard 60-deg. F. sale-price temperature.

BREVITY—Identify by IEN - 10303 if you write the maker

## MANILA ROPE . . Water proof design to protect against electric shock

Source: SOUTH EASTERN CORDAGE
644-A N. B. C. Bldg., Cleveland 14, Ohio

**Company offers sample for test**

**Se-Lectric** trade names a new manila rope that is treated to impart water-proof qualities that deter electrical conduction. The rope is resistant to carrying an electric current when it comes in contact with uninsulated conductors. The company has carried out a series of tests which it outlines in a new 8-page bulletin, "Electrical Properties of Manila Rope".

BREVITY—Identify by IEN - 10304 if you write the maker

## DRAFTING . . Steel table mounts adjustable soft-wood top

Source: STACOR EQUIPMENT CORP.
1891 Atlantic Ave., Brooklyn 33, N. Y.

**Steel table** in baked enamel finish carries one or two sliding steel drawers and supports a kiln-dried soft-wood top in this new unit. Three sizes measured over the top are 36 by 60 in., 36 by 72 in., 42 by 72 inches. List price with a shallow drawer and also a tool drawer is about $75 to $83. List price is about $60 to $77.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10305 if you write the maker

**AJAX**

## KNOWS COUPLINGS

● Use of Neoprene Bushings combine Ajax resilient yet positive drive with the chemical resisting characteristics of Neoprene. They help processing plants in chemical, petroleum and similar industries reduce downtime. Ajax Flexible Couplings have been regarded as THE STANDARD for 30 years.

*Write for Bulletin 48*

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, N. Y.

BREVITY—Identify by IEN - 10306 if you write the maker

## *Mechanical Separation* WITH SPENCER VACUUM

Spencer Vacuum picks up, conveys, separates and deposits all kinds of materials. With these functions, all provided by one machine, engineers are designing ingenious, automatic vacuum applications. A simple form of separation is shown above. Cans of heat treated metal parts are dumped over a vacuum screen. The bone ash is taken to a Spencer Separator and is ready to use again. In a chemical plant, Spencer elevates powders to the roof—and dropped from floor to floor over vibrating screens.

Spencer Industrial Vacuum equipment is made in sizes from 1½ to 100 HP. Ask for Bulletin No. 125D.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

BREVITY—Identify by IEN - 10307 if you write the maker

## SYNTHETIC SAPPHIRE *for*

***Resistance to Wear***
Outlasting hardened steel and cemented carbides up to 5,000 times.

***Resistance to Friction***
Affording very low friction characteristics due to hardness and surface continuity.

***Resistance to Heat Distortion***
Retention of form at temperatures up to 1,000° C.

***Retention of Insulating Properties***
Excellent dielectric properties over a wide range of temperatures.

Synthetic Sapphire can be polished by flame or diamond polishing; it can be formed and bent by flame. Polished sapphire surfaces keep free of dirt, lint, and in many anti-friction applications, need not be lubricated.

Call or write the LINDE office nearest you for a copy of the booklet, "LINDE Synthetic Crystals For Industry". Ask for Form 7560.

**LINDE AIR PRODUCTS COMPANY**
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd St., New York 17, N. Y. · Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

BREVITY—Identify by IEN - 10308 if you write the maker

## Delpark COOLANT FILTERS

**FOR GREATER GRINDING EFFICIENCY**

Grinding problems can be minimized and production increased with Delpark Full-Flowing, Self Cleaning Coolant Filters. Complete and continuous filtration of soluble oils and cutting oils removes heat-bearing solids as coolant comes from the work. Assures more uniform limits, better finish, and greater accuracy with a clean wheel and lower coolant temperature. Fully automatic, no down time for cleaning reservoir, extends coolant life. Two to several hundred gallons per minute capacities.

- Less wheel dressing
- Longer wheel life
- Uniform coolant temperature
- Lowers rejections
- More accurate gauging

**Delpark**
INDUSTRIAL FILTRATION
*Backed by 30 Years Experience in Industrial Filtration*

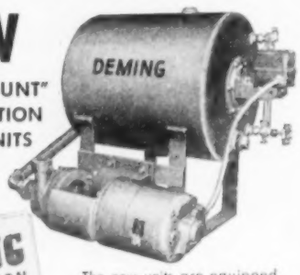
*Write for more complete information*

INDUSTRIAL FILTRATION COMPANY
5110 Industrial Avenue • Lebanon, Indiana

BREVITY—Identify by IEN - 10309 if you write the maker

# NEW

"MOTOR-MOUNT" CONDENSATION RETURN UNITS



The new units are equipped with Deming "MOTOR-MOUNT" centrifugal pumps. Motor has standard NEMA type "C" mounting flange and is furnished in single phase, two or three phase, or direct current, as specified.

The complete line includes Single Units and Duplex Units in a wide range of sizes for taking care of 2,000 to 40,000 square feet of radiation. (The Single Unit type is illustrated.)

Send for illustrated BULLETIN NO. 4400 which includes performance tables of capacities, pressures and other information about Deming "MOTOR-MOUNT" Condensation Return Units.

**The Deming Company, 521 Broadway, Salem, Ohio**

BREVITY—Identify by IEN - 10310 if you write the maker

*Put* **WILLIAMS-HAGER** FLANGED *Silent* **CHECK VALVES** *into the picture—*

**and your WATER HAMMER WORRIES ARE OVER**

When you install Williams-Hager flanged Silent Check Valves in your water system, you complete the happy picture of a plant . . . rid of costly water hammer. These dependable valves provide positive protection in any position including angular, horizontal and vertical with flow either upward or downward. Disc and seat are renewable—conical spring is non-wearing. Easy to install or reseat, they are available in standard pipe sizes from 1" to 20".

Write today for Bulletin WH-100.

**THE WILLIAMS GAUGE CO.**

Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns

2900 PENNSYLVANIA AVE. • PITTSBURGH 33, PA.

BREVITY—Identify by IEN - 10311 if you write the maker

**3-WAY SAVINGS WITH . . .**

# REVOLVATOR Red Giant Liftruck AND SKID PLATFORMS

YOU MAKE a triple saving with this Revolvator "package." Powerful Red Giant Liftruck and steel-bound skid platforms (1) save man-hours; (2) lower maintenance; (3) save dollars because skid platforms cost less when purchased with Liftruck. • *Write for Bulletins 170 and 174 for complete information.*

**Double Stroke RED GIANT LIFTRUCK**

Powerful hydraulic Liftruck is easy to pull. Two-stroke handle pumping is simple . . . quick. Lifts 2500 to 5000 lb in arc of over 75°. Shock absorber release for smoothness, long life.

**Steel Bound SKID PLATFORMS**

Superior strength insures long wear. Platforms of hard wood, steel-bound, bolted and with legs of heavy bar steel. Fully bolted construction permits easy replacement of boards. Made in many weights and sizes.

**REVOLVATOR CO.** 8759 Tonnele Avenue North Bergen, New Jersey

BREVITY—Identify by IEN - 10312 if you write the maker

**PROCESSING . . Gas fired unit for materials requiring heat to mix**

Source: L. O. KOVEN & BROTHER INC.
156 Ogden Ave., Jersey City 7, N. J.

**Dimensions** of the 14-gage stainless-steel tank in this new mixing equipment are 36 in. in diameter and height. The bottom is dished and the tank is jacketed for working pressure to 5 lb. per square inch. The outer jacket wall extends down to the floor and is flanged to form a base. Four ring-type gas burners feed in through the wall. They are rated at 300 cfm. and burn manufactured gas.

**Stainless-steel** vertical blades measuring 1½ in. in width comprise the mixing head. They are equally spaced on a horizontal stainless-steel T-bar assembled on a vertical shaft with geared connection to a 2-hp. geared-head motor. Operation is at 47 rpm. Material discharge is through the bottom of the tank and is controlled by a horizontal long-stem valve with the handle extending through the outer shell.

BREVITY—Identify by IEN - 10313 if you write the maker

**DISPENSING . . Water carrier with insulated housing and faucet**

Source: VAPOR HEATING CORP.
4503 W. 16th St., Chicago 23, Ill.

**Igloo** trade names a new Bettis insulated container to keep water cool or coffee hot for workers operating on outside jobs. The galvanized sides are corrugated and a layer of Dow Styrofoam is enclosed between the inner and outer shells for insulation. Carrying handles protect the top cover which is removable for filling. A push-button faucet can be specified to be set in flush with the sides of the housing. Four sizes rate 1½ to 10 gallons.

BREVITY—Identify by IEN - 10314 if you write the maker

**MANAGEMENT . . Book analyzes American economy by input and output of its major industries as a basis**

Oxford University Press
114 Fifth Ave., New York 11, N. Y.

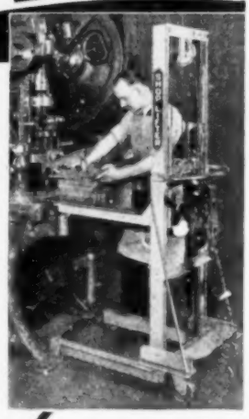
**1951 edition** of the book, "Structure of the American Economy 1919-39" includes additional information on applications of the theories set forth in the 1941 edition. The 282-page book, list price $5.75, describes how the American industrial economy works by flow of commodities and services from one major industry to another, the theory involved, statistical and analytical data, how the methods can be employed for policy-making decisions.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 10315 if you write the maker

**Cut production costs with a**

# SHOPLIFTER



All steel, welded, framework. Easily operated hoist unit with automatic brake, holds load at any height.

•

**500 pound capacity**
Type D,
hand operated .....$254.00

•

**1000 pound capacity**
Type DX,
hand operated .....$490.00

•

**2000 pound capacity**
Type DX,
hand operated .....$590.00

•

Floor lock to hold machine steady: $16.00 extra for 500 pound sizes; $24.00 extra for type DX models.

•

*PROMPT DELIVERY*

4502 W. Lake Street
Chicago 24, Illinois

List prices, F.O.B. Chicago, subject to current discount

**ECONOMY ENGINEERING CO.**

BREVITY—Identify by IEN - 10316 if you write the maker

**TIPS by the dozen on a sure thing!**

WEIGER-WEED

*Send for this free booklet of latest information on Resistance Welding.*

# SPOT WELDING TIPS

Resistance Welding knows this symbol. In shops small and large, it means dependability in Tips for sound, clean welds—efficient cooling—speedy welding—long tip life—less down time—welding at a saving!

WW Tips are made of alloys of the correct physical and electrical properties, and they are precision-machined, water-tight and electrically tight fitting.

Replaceable tips, both straight and offset, WW leak-proof holders, seam welding wheels, electrodes, dies and special alloys are available in standard sizes which you will find in the WW Catalog "Standard Replaceable Welding Tips—Standard Water-Cooled Holders." Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan.

WEIGER-WEED 12801-D

Resistance Welding ELECTRODES
DIES • TIPS • WHEELS • HOLDERS

BREVITY—Identify by IEN - 10317 if you write the maker

**SEND FOR BULLETIN 201**

# TUBULAR ELECTRIC HEATERS

for open tanks and pressure vessels

HYNES Tubular Heaters are available in single or multiple tube units for any practical heat density and input capacity range.

1. Easy installation. No fluid joints. No leakage troubles ever. Lengths up to 150 ft.
2. Low heat density—large heating surfaces — no hot spots — prevents carbonizing.
3. Elements easily removed without draining the tank.
4. Moisture and explosion-proof forms available.
5. Service-life measured in decades. Installations made many years ago have never required service.

**HYNES ELECTRIC HEATING DIVISION**
**MARTIN-QUAID COMPANY**
1815 W. Sedgley Ave., Philadelphia 32, Pa.

BREVITY—Identify by IEN - 10318 if you write the maker

**Your Entire Stock of Drills . . . Seen at a glance**

# HUOT DRILL DISPENSER

for

• TOOL CRIBS • STOCK ROOMS • MACHINE SHOPS

*Saves Time* hunting through stacks of packaged drills. Compartments hold a gross of small sizes—a dozen or more of the larger ones. Raised letters on easy sliding drawers . . . hammerlin gray baked enamel finish . . . 14½"x7¼"x7¼".

Write for Circular
**Model No. 1:** Fractional drills ⅛" to 1½"
**Model No. 2:** Number drills 1 to 60
**Model No. 3:** Letter drills A to Z

**HUOT MFG. CO.** 565 NORTH WHEELER ST. PAUL 5, MINNESOTA

BREVITY—Identify by IEN - 10319 if you write the maker

## INDUSTRIAL HUMIDIFYING UNIT

Bahnson Type BA-2 Humidifier—completely self contained, including fans, motors, humidifiers, 4-way adjustable grilles, and automatic humidity control. Requires only power supply line, water supply and drain lines for installation. Eliminators remove excess free moisture. Delivers approximately 4000 CFM and evaporates up to 10 GPH.

The Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

BREVITY—Identify by IEN - 10320 if you write the maker

## OHMITE RHEOSTATS

**BUILT FOR Unfailing Dependability**

*Write* on Company Letterhead for Catalog and Engineering Manual No. 40.

**OHMITE MFG. CO.**
4813 Flournoy Street, Chicago 44, Illinois

*Be Right with* **OHMITE**®
RHEOSTATS • RESISTORS • TAP SWITCHES

BREVITY—Identify by IEN - 10322 if you write the maker

## HEATING . . Dielectric equipment rates 20 kw., has push button control

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Room 1110 Pittsburgh 30, Pa.

**Non-metallic** materials are heated for processing by this new 20 kw. radio-frequency dielectric equipment. It is suitable for batch or continuous production application with delivery of rated power on a 100 per cent duty cycle. Controls center at a panel at the front of the housing. The enclosure is designed to minimize radio-frequency radiation. The assembly is certified to comply with FCC regulations on dielectric heating equipment.

BREVITY—Identify by IEN - 10323 if you write the maker

## WATER PROOFING . . Colorless liquid for use on masonry surfaces above grade

Source: L. SONNEBORN SONS INC.
80 Eighth Ave., Dept. P, New York 11, N. Y.

**In gallon cans to 54 gal. drums**

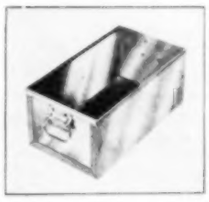
**Hydrocide SX Colorless** is a new formula supplied in liquid form in the company's line of waterproofing materials for masonry surfaces. It is intended for exterior application above grade on concrete and masonry. It soaks into the surface, lines the internal pores and capillaries of sound concrete or masonry so they are highly water repellent. The surface can be painted over if this type of final finish is required.

**Coverage** is 100 to 150 sq. ft. per gal. on poured concrete walls, 75 to 100 sq. ft. per. gal. on concrete cinder and coarse aggregate block. Application permits the walls to breath, does not close the pores.

BREVITY—Identify by IEN - 10324 if you write the maker

## HANDLING . . Steel shop box, eight sizes to 22 by 12 by 8 inches

Source: PLATT & LABONIA SHEET METAL MFG. CO.
68-72 Broadway, North Haven, Conn.



**Drop handles,** design to permit stacking, and welded assembly are featured in a new line of shop boxes. Steel in 16 to 18 gage can be specified in any of the eight sizes in the line. The box has been designed particularly for production use in heavy duty service. The company is prepared to make prompt delivery.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10325 if you write the maker

*. . . the new separable*

## FLEXCO HINGED BELT FASTENERS

U. S. Patent No. 2,477,855

- For joining grader, trencher, ditcher and other earth moving conveyor belts.
- For belts ⅜" to ½" thick.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.

*Order From Your Supply House. Ask for Bulletin HF 500.*
FLEXIBLE STEEL LACING CO
4610 Lexington Street • Chicago 44, Illinois

BREVITY—Identify by IEN - 10326 if you write the maker

## EASY, ACCURATE surface heating with G-E Calrod* Heaters

Put surface heat *where* you want it, *when* you want it, and in the *amount* you want it with G-E Calrod heaters. Calrod heaters are available for clamping on surfaces, inserting into drilled holes, casting into metal, locating in grooves, wrapping around cylinders and spacing away from surfaces. And they come in a wide enough range of sizes, ratings, and sheath materials to meet almost every conceivable heating requirement.

*For a "spot" of heat, insert cartridge heaters into drilled holes . . .*

*For a "zone" of heat clamp on strip or tubular heaters or*

*. . . cast Calrod tubular heaters into metal*

**FOR NEW FREE CATALOG,** GEC-1005A and application bulletin GEA-5097, "Heating Surfaces," write on your letterhead to: *Section 720-17, Apparatus Dept., General Electric Co., Schenectady 5, New York.*
*Reg. U. S. Pat. Off.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 10327 if you write the maker

## CASTELL LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

**REFILL DRAWING PENCIL**
*(black or colored)*

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

**No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H**

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY INC.

BREVITY—Identify by IEN - 10328 if you write the maker

## *Combined* PNEUMATIC TOOL SUSPENSION AND AIR SUPPLY

**HOSE** which supplies air suspends pneumatic tool directly over the work spot, always handy. Tool is counterbalanced by spring tension of reel. Releasing tool lifts it automatically to convenient position. No cable suspension, no dangerous loops of loose hose to cause accidents. Speeds up production, lessens fatigue, reduces tool maintenance cost, saves hose.

SEE YOUR JOBBER OR WRITE

Wayne
THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO

**INDUSTRIAL HOSE REELS**
FOR AIR, WATER, FLUID LUBRICANTS AND COOLANTS

BREVITY—Identify by IEN - 10329 if you write the maker

# SHORT-CUT to IRREGULAR SHAPES

THE HEINRICH HEAVY-DUTY

## HANDNIB

A HAND-OPERATED COMBINATION NIBBLING, SHEARING, PUNCHING AND ROD CUTTING MACHINE.

(With Swivel Base)

Capacity: Nibbling and Shearing 3/16" flat stock . . . Punching Holes up to ½" in ⅛" sheets . . . Rod Cutting 3/16", ¼", 5/16" and ⅜" round bars.

Ask for descriptive folder.
*Prompt delivery.*

NATIONAL MACHINE TOOL CO.

**THE NATIONAL MACHINE TOOL CO.**
1536 CLARK STREET • RACINE, WISCONSIN

BREVITY—Identify by IEN - 10330 if you write the maker

*Users of Wire Rope and Chain Fittings!*

# THIS FREE BOOK

*Will Save You Time, Money*

Find the right fittings . . . *right away*. Do away with needless, costly "specials" — choose from Laughlin's wide array of standard items.

This comprehensive, 44-page Laughlin No. 150 Catalog-Data Book gives you the answers to such pertinent questions as: What size eye bolt will lift a 15-ton load? How many Safety Clips should be used on 1" rope? What size shackle is as strong as ⅜" proof coil chain? What is the safe working load rating of a number 30 hook? Contains complete data on wire rope and chain fittings.

Write for your free copy of this informative, illustrated booklet today. THE THOMAS LAUGHLIN COMPANY, 110 Fore Street, Portland 6, Maine.

**LAUGHLIN**

THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

BREVITY—Identify by IEN - 10331 if you write the maker

# "LET OUR MAN FRIDAY" DO ALL YOUR WORK!

• *Stop your payroll headaches* with this new improved Simplex Payroll Recorder.
Faster 3 ways —
Automatic Operation — Fool Proof — Saves Employees' Time.
Two color registration for late arrivals and early departures.

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. 110

YES! Please give us more information on:

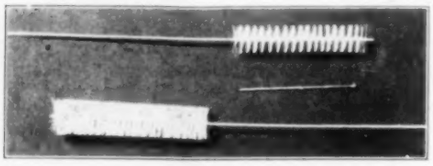
- ☐ Payroll Recorder
- ☐ Watchman's Clock
- ☐ Time Card Files
- ☐ Electric Time Stamp
- ☐ Time Card Racks
- ☐ Time Cards

Firm _____
Name _____
Street & No. _____
City _____ State _____

BREVITY—Identify by IEN - 10332 if you write the maker

## BRUSH . . Miniature cylindrical, diameter range is from 0.170 to 1 inch

Source: WALTER BORTEN CO.
51 Furnace Dock Road, Peekskill, N. Y.



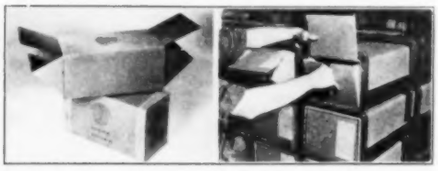
**Samples** are available on request from prospective users for the company's line of miniature cylindrical brushes. The new units are available to specification on quantity order in wire diameter from 0.020 to 0.062 in. and in length of the wound wire as required. Bristle diameter ranges from 0.170 to 1 inch. Length of the bristle section can be any amount between 0.00 and 4 inches.

**Stainless steel,** Monel Metal, brass are representative materials for the wire. Horse hair, goat hair, fiber, nylon can be specified for the bristles. The company is prepared to recommend the proper brush on receipt of specifications, a sketch or an actual part on which it is to be used.

BREVITY—Identify by IEN - 10333 if you write the maker

## CONTAINER . . Corrugated fiber unit for shipping, storing and dispensing

Source: BIRD & SON
43 Washington St., East Walpole, Mass.



**Bin-Pak** trade names a new corrugated fiber container that employs a sleeve running through its length with scoop ends that pull out a limited distance. Covering flaps seal the ends of the box when they are taped in place.

**Dimensions** are correct to fit Berger, Lyons, General Fireproofing or other standard storage racks. The container also can be used alone. After the original materials it contained have been emptied out it can be used for storage of other materials in stock or in process.

BREVITY—Identify by IEN - 10334 if you write the maker

## CONTROLS . . Commemorative issue of house publication marks company's 100th year

Taylor Instrument Cos.
59 Ames St., Rochester 1, N. Y.

**Spring issue** of "Taylor Technology" traces the company's development from its original manufacture of thermometers and barometers to its present line of indicating, recording and control instruments and associated equipment. Pictures show manufacturing facilities, quality control, production steps, applications in a variety of industry.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56*

BREVITY—Identify by IEN - 10335 if you write the maker

# Stop CORROSION in your Steam System

WITH CORAVOL BOILER

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

**CORAVOL** is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2053024 covering the use of volatile amines in steam systems.

**WESTERN CHEMICAL CO.**
715 WASHINGTON KANSAS CITY, MO.

BREVITY—Identify by IEN - 10336 if you write the maker

Hills-McCanna offers *Over 20,000* different assemblies for valving "hard-to-handle" fluids

32 Bonnets
14 Diaphram Materials
49 Body Materials

No matter how specialized your problem of valving corrosive and/or hazardous substances, slurries, viscous liquids, gases, fermentation products, materials subject to coagulation, foods or beverages, the chances are that Hills-McCanna can furnish the proper valve to meet your needs. Write, today, for full information and descriptive literature, HILLS-McCANNA CO., 2347 W. Nelson Street, Chicago 18, Illinois.

**HILLS-McCANNA**

*Saunders patent diaphragm valves*

*Proportioning Pumps*
*Force-Feed Lubricators • Magnesium Alloy Castings*

BREVITY—Identify by IEN - 10337 if you write the maker

## When you consider VENTILATORS

# Ask for PROOF OF PERFORMANCE!

Claims are a dime a dozen in the ventilating field. The only way to be *sure* of what you're buying in *any* make of ventilator is to insist on certified capacity ratings derived from tests made with the wind blowing against the ventilator in *all* directions as shown below. True performance under actual operating conditions can be determined only by such tests!

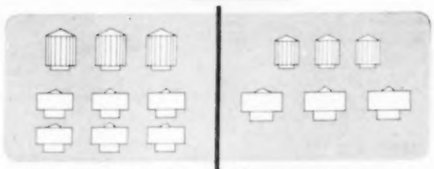
Patent No. 2269428

**Breidert Air-X-Hausters**

## give you CERTIFIED and Published Capacity Ratings

Breidert ratings *are* based on tests made with wind blowing in all directions.* No matter which way the wind blows, barring interior negative pressures, the Breidert provides safe, sure ventilation . . . on roofs, vent flues, chimney tops. Stationary, no moving parts, nothing to jam or get out of order.

**HOW YOU CAN GET BETTER RESULTS WITH LESS MONEY**



*It takes fewer Breiderts to do the job as same size conventional ventilators.* (or) *You can use the same number of smaller size Breiderts to do the same job as conventional ventilators.*

Get *all* the facts! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dept. C.

*By Pittsburgh Testing Laboratories

**THE G. C. BREIDERT CO.**

3129 San Fernando Road, Los Angeles 65, Calif.
Representatives in principal cities throughout the U.S.

BREVITY—Identify by IEN - 10339 if you write the maker

New! Low-Cost! Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.

118-A Noble Court • Cleveland 13, Ohio

BREVITY—Identify by IEN - 10340 if you write the maker

"Now he's working on a project to line banana peels with slip-resistant 4-WAY Safety-Plate."

For greater safety under foot, in your plant and on your products

Inland 4-Way® Safety Plate

Light! Strong!

Lasts Long

Quick Cleaning

Stays Flat

INLAND STOCKED BY LEADING STEEL WAREHOUSES

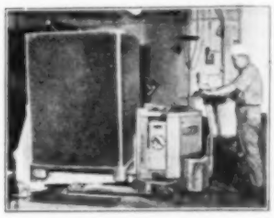
INLAND STEEL COMPANY, Dept. IEN-103
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas — Just Out! Bulletin F1. Complete engineering and application data. Send for it!

BREVITY—Identify by IEN - 10342 if you write the maker

## TRUCK . . Power lift fork design carries and tilts materials Tote bins

Source: LEWIS-SHEPARD PRODUCTS INC.
194 Walnut St., Watertown 72, Mass.



**New design** of the company's Jackstacker electrically-operated power-lift fork truck has been developed for use with the Tote aluminum material-handling bins, previously described IEN-5793-50. The truck mounts a pair of forks that straddle the tilt rack supplied with the bin so it can be lifted from its rack for movement to another location. The truck also is equipped to assist the tilt rack when the bin is to be moved from horizontal to tilted position.

**The bin** measures 42 by 48 by 69 in. in its largest size and has load rating to 2 ton. Its top corners are reinforced for stacking. There is a 9-in. fill opening at the top and a dispensing opening near the bottom. Application is primarily in handling bulk materials that must be kept clean and free from contamination.

**The truck** is available in telescopic and non-telescopic models, the latter with fork elevation to 53 in. and the former to 77 inches. Truck construction includes a General Electric traction motor and the company's own design of hydraulic lift mechanism. Power is supplied by a battery. The operator walks beside the unit and controls its operation at the steering handle.

BREVITY—Identify by IEN - 10343 if you write the maker

## MOTOR . . Single phase capacitor unit operates vertically, 3/4 to 5 hp. sizes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

**Type KCS** vertical single-phase capacitor motor is a new addition to the company's Tri-Clad motor line. It is available for 60-cycle operation on 40 deg. C. temperature rise in sizes from 3/4 to 5 hp. It is designed particularly for use on jet pumps and is normally furnished as a part of a complete pump. The Type-P base is machined to NEMA Standards, the same as those of poly-phase motors of the same size, for interchangeability in mounting.

**A squirrel-cage rotor** is employed with a centrifugally-operated transfer switch to change from starting to running connection without radio interference. A thermal protective device is available to disconnect the motor from the line when limiting temperature is reached for any reason. It applies on new motors in ratings of 2 hp. and less. The rotor is mounted on ball bearings. The cast-iron frame is equipped with integral lifting lugs. The capacitor is enclosed in protected position under the top end housing.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10344 if you write the maker

PUSH BUTTON INSULATION RESISTANCE TESTING

with

VIBROTEST

- RANGES TO 50,000 MEGOHMS
- NO CRANKING
- NO LEVELING
- ALL-ELECTRIC
- RUGGED
- FULLY PORTABLE
- ACCURATE

VIBROTEST is built throughout to make insulation resistance testing FAST, EASY and ACCURATE for you. No laborious cranking...No mechanical parts to get out of order...Only two binding posts for ALL tests. Several Models have A.C. and D.C. volt ranges, as well as low resistance ohmmeter.

This is an instrument that makes insulation resistance testing a "push-button" affair! Ask for more information.

WRITE FOR BULLETIN 2-A

ASSOCIATED RESEARCH, Incorporated

"Precision Instruments Since 1930"

3762 West Belmont Avenue • Chicago 18, Illinois

BREVITY—Identify by IEN - 10345 if you write the maker

M&M air fluff paper shredder

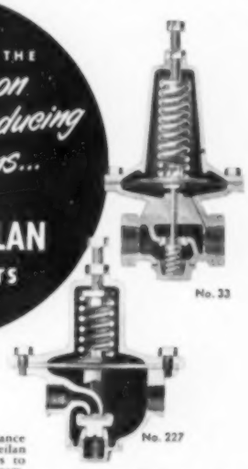
The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

mitts & merrill

1014 South Water • SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 10346 if you write the maker

HOW TO PUT THE 'Freeze' on Pressure Reducing Problems... USE MASONEILAN Regulators



No. 33

No. 227

Production and maintenance men can count on Masoneilan Pressure Reducing Valves to give accurate control of steam, water or air. Constructed to high quality standard, they give long-lived service . . . require minimum of maintenance because they are *built up to the job* not down to price.

No. 33 for steam or air service — sizes from 1/2" to 3/4". Reduced pressure ranges 2-20; 20-40; 40-100 psi. Maximum working pressure 200 lbs.

No. 227 for water service — sizes 1/4" to 2". Reduced pressure ranges 10 to 60 psi. Maximum working pressure 150 psi. Also available for air service from 1/4" to 1".

Your local Mason-Neilan Industrial Distributor is Ready to serve you from stock; or Write —

Mason-Neilan Regulator Company
1189 ADAMS STREET, BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 10347 if you write the maker

HIGH SPEED PIPE THREADING

OSTER

"RAPIDUCTION" MACHINES

● Typical "RAPIDUCTION" speeds: 11 seconds for 1½" pipe; 25 seconds for 3" pipe; 66 seconds for 6" pipe; comparable speeds on all other sizes within range of these machines.

No. 6-A "RAPIDUCTION": Standard range 1½" to 6" pipe; bolt range 1" to 4".

No. 8 "RAPIDUCTION": Standard range 2½" to 8" pipe.

One die-head and one set of dies threads all sizes of same pitch, right hand, American National Standard, without change. Write for "RAPIDUCTION" catalog.

THE OSTER MANUFACTURING CO.
2053 EAST 61st STREET • CLEVELAND 3, OHIO, U.S.A.

BREVITY—Identify by IEN - 10348 if you write the maker

# WATSON-STILLMAN HYDRAULIC POWER TOOLS

**HYDRAULIC JACKS**

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

**HAND PUMPS**

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

**PORTABLE PIPE BENDERS**

Bends all standard, extra heavy and double extra heavy steel pipe from 3/8 in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

**WIRE ROPE SHEARS**

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

*Write for Bulletin A-5*

9-1-54

Distributor Products Division
WATSON-STILLMAN
ROSELLE, NEW JERSEY

BREVITY—Identify by IEN - 10349 if you write the maker

# Check Temperatures Instantly... Accurately with Alnor TYPE 1500 PORTABLE PYROMETER

*Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.*

## Here's Why

**It's Fast** . . . in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

**It's Accurate** . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000° F. Equivalent Centigrade scales available at no extra cost.

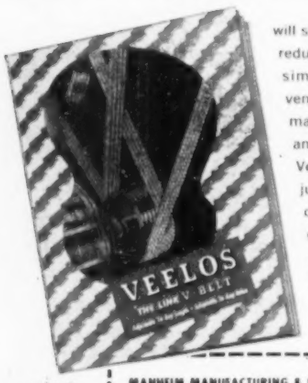
**It's Portable** . . . compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

*Send for Bulletin on 1500 Pyrometer.*

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 10350 if you write the maker

# This V-Belt Data Book




will show how you can reduce V-belt costs . . . simplify V-belt inventory . . . increase machine production and efficiency with Veelos—the adjustable V-belt. It contains useful engineering data and many illustrations. It's free and full of facts.

Clip Coupon for free Copy!

MANHEIM MANUFACTURING & BELTING CO.
651 MANBEL ST., MANHEIM, PA.

Name

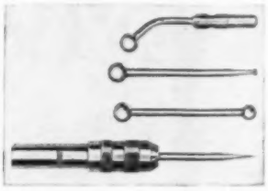
Company

Address

BREVITY—Identify by IEN - 10351 if you write the maker

## GAGE . . Wiggler holder with interchangeable centering points

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.



**New holder** with a shank diameter measuring ⅜ in. assembles a clamp or chuck that grips interchangeable points by their swivel ball ends to permit adjustment as required in a centering, set-up or gaging operation. Centers for jig and tool work can be located quickly with the sharp point. Spring tension at the ball end in the holder permits guiding the point to true concentricity. Spring tension can be varied by turning an adjusting screw at the rear of the shank.

**The ball point** is employed in locating work. Contact ball end measures 0.250 inch. Another has a small disc at the end measuring 0.100 in. in diameter for use in confined slots, shallow holes. Length over the holder is 2⅝ inches. Length with the attachment point in place is about 4⅛ inches.

BREVITY—Identify by IEN - 10352 if you write the maker

## SEALING . . Inflatable strip for aircraft and amphibious vehicles

Source: B. F. GOODRICH CO.
448-52 S. Main St., Akron 11, Ohio

**Inflatable Strip Seal** employs a textile fabric, rubber coated on both sides, and a flexible rubber channel-type base. The fabric is vulcanized while in collapsed position to the base so that there is very little stretching in the rubber when the seal is inflated. The fabric also carries the corrugated sealing member which comes up to close against leakage when inflation pressure is admitted.

**The seal** applies on aircraft canopies, on weather sealing between fuselage and detachable cargo structures in transport aircraft and in sealing against water leakage in amphibious vehicles. Each unit is designed and made to order.

BREVITY—Identify by IEN - 10353 if you write the maker

## LIGHTING . . Detail presentation in booklet on company's sound-absorbing glare-free luminous ceiling

F. W. Wakefield Brass Co.
River Road at B & O, Vermilion, Ohio

**Lift-up pages** in new 34-page booklet, "Wakefield Ceiling," show surface appearance of the company's luminous acoustical ceiling and the structural, electrical, diffusing and acoustical members that comprise it. Text presents detail illumination and acoustical data including specific performance reports.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10354 if you write the maker

current measurements FOR BOTH AC and DC

WITH A COLUMBIA

# TONG TEST AMMETER

There is no other instrument like a Tong Test—it measures both A.C. and D.C. Readings are made instantly and accurately.

These outstanding features are yours when you use a Tong Test Ammeter:

- No breaking of circuit
- Operated with one hand
- Safe and convenient to operate
- Light weight—low price
- Scale ranges up to 1000 Amperes
- Voltage attachment available
- Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½"

*Write for Tong Test Bulletin IQ-400*

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

BREVITY—Identify by IEN - 10355 if you write the maker

AERO-SEAL WORM-DRIVE HOSE CLAMPS

# WON'T SHAKE LOOSE!

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band—hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

**One-Hand Installation**

Install on Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

**Re-use Again and Again**

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

ALL AERO-SEALS HAVE STAINLESS STEEL BANDS

"Aero-Seal" WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE PRODUCT

BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

BREVITY—Identify by IEN - 10356 if you write the maker

*In production or in storage*

# IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY

Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

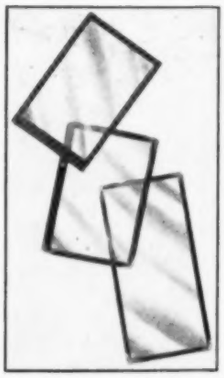
Ironbound

**IRONBOUND**
BOX & LUMBER COMPANY
*Materials Handling Division*
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 10357 if you write the maker

# SAVE TIME & MONEY WITH "T.P.A."* TRANSPARENT WORK RECORD HOLDERS—



REDUCE COSTLY ERRORS. KEEP WORK RECORDS CLEAN AND UNDERSTANDABLE. STEP UP JOB EFFICIENCY. Used in increasing numbers throughout defense industries. Hands may be dirty but records keep clean with "T.P.A. protection. No misunderstoods." No alibis. No confusion. For work records, job ticketing, material control and many other uses.

Write for low cost data—FREE sample—while supply lasts.

All new clear plastic protection. Leatherette bound. Reinforced corners. Styles to suit your needs.

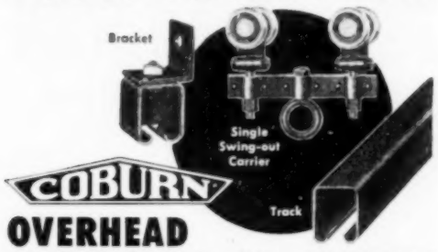
Binder envelopes — Blue Print Holders — Workshop envelopes — I.D. Card holders—Billfold inserts —Plastic specialties

TPA TRANSPARENT PLASTIC WORK
Trade Mark

"NAPLASCO" NATIONAL PLASTIC COMPANY
16 East 23rd Street, New York, N. Y. (GRamercy 7-1399)
8 South Dearborn, Chicago, Ill. (CEntral 6-0825)
Main Office and Factory: 2591 E. Foothill Blvd., Pasadena, Calif. (RYan 1-8147)

BREVITY—Identify by IEN - 10358 if you write the maker

# BOOST PRODUCTION




COBURN

# OVERHEAD CONVEYING EQUIPMENT

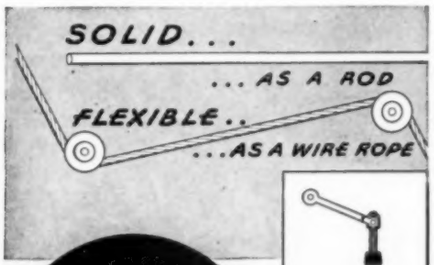
Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

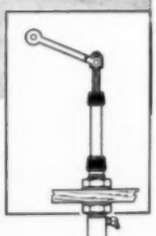
For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

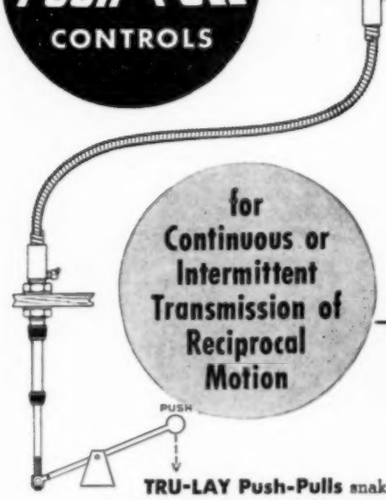
BREVITY—Identify by IEN - 10359 if you write the maker



TRU-LAY PUSH-PULL CONTROLS

for Continuous or Intermittent Transmission of Reciprocal Motion




**TRU-LAY Push-Pulls** snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.

*Write our Detroit office today for* **DH-287**

ACCO
601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
*In Business for Your Safety*

BREVITY—Identify by IEN - 10361 if you write the maker

## TIMING . . Worker time card, eight duplicate sheets on card back

Source: PATTISON LUNDAL CO.
4305 Milwaukee Ave., Dept. E. Chicago 41, Ill.

**Multi-Time-Card** trade names a new eight-sheet time card for which patent has been applied. The sheets are duplicate and are stapled to a cardboard back. A strip of carbon is on the back of each sheet under the space where the employee's name and clock number appear so an initial writing or typing in this space will be duplicated on all the sheets below.

**After each week,** a sheet can be removed and the card continued in use in subsequent weeks without having to rewrite the name and clock number. The card is available for specified time clocks in standard and special layout. All eight sheets in one assembly, without the cardboard back, are about the same thickness as the usual standard time card.

BREVITY—Identify by IEN - 10362 if you write the maker

## METAL . . Haynes alloys rerolled to thin gages as specified

Source: GENERAL PLATE
41-45 Forest St., Attleboro, Mass.

**Orders require priority rating**

**The company announces** set-up of facilities to re-roll certain Haynes alloys to produce them in random flat lengths or coils in gages below 0.050 inch. Width is standard at 6 in. but wider material to 8 in. can be supplied when specified. Narrower pieces than 6 in. are produced by slitting after the final rolling operation.

**Four alloys** are currently available in the thin gages to include Haynes Alloy 25, Hastelloy B, Hastelloy C, Haynes Stellite Multimet, all for defense applications.

BREVITY—Identify by IEN - 10363 if you write the maker

## THREADING . . Tapping machine rates 3/8 in. tap in cold rolled steel

Source: ALTO MFG. CO.
1645-49 Wolfram St., Div. 7, Chicago 13, Ill.

**Reversing head** in this new tapping machine encloses a cone friction drive and is belt connected to a 1/4-hp. 110-volt 60-cycle ac. motor mounted on its housing. A chuck-equipped spindle extending from one side operates in connection with a work back-up plate that slides in and out against a spring. The machine will take taps from 1/8 to 5/8 in. and is provided with three speeds by positioning the belt on the two sheaves. Dimensions are 21 by 11 by 18 inches. Weight is 85 pounds.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10364 if you write the maker

DRIVE SCREWS FASTER!

"SHAKEPROOF" POWER SCREW DRIVER

Hopper feeding eliminates tedious, costly separate screw handling—speeds driving up to 60 or more screws per minute! Ideal for driving Sems or Thread-Cutting Screws as well as machine screws, sheet metal screws or wood screws.

SEE HOW YOU CAN CUT SCREW DRIVING TIME — SEND FOR YOUR FREE COPY OF THE SHAKEPROOF POWER DRIVER BOOKLET TODAY

SHAKEPROOF inc.
Division of Illinois Tool Works
2501 NORTH KEELER AVENUE
CHICAGO 39, ILLINOIS

BREVITY—Identify by IEN - 10365 if you write the maker

Century 5 horsepower totally enclosed fan-cooled motor drives a mixer in a processing plant.

Century Serves the Electric Motor User in Two Important Ways:

1. Century motors are designed and constructed for a long, dependable operating life.
2. And — they are skillfully selected to match the operating characteristics of the many kinds of equipment they drive.

In CENTURY'S wide range of types and sizes (up to 400 H.P.) there are available: 4 classes of starting torque — 6 methods of speed control — 4 classes of frame protection — a dozen methods of mounting the motor — plus many special specifications.

*Both* proper design and skillful applications are required to give top performance and long life.

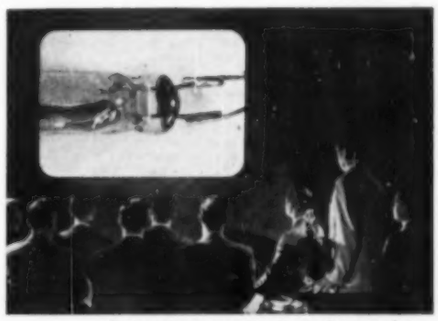
Specify Century motors on all your equipment.

Century Electric Company is celebrating its 50th year in the electrical industry.

CENTURY ELECTRIC CO.
1806 Pine Street • St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

BREVITY—Identify by IEN - 10366 if you write the maker

# Now... High Speed Movies OF MECHANICAL ACTION AND OSCILLOGRAPH TRACES Combined on One Film



These engineers are seeing for the first time what actually happens at the "break" of a mercury switch.

The Kodak High Speed Camera can now be supplied with a special feature which permits the recording of cathode-ray oscillograph traces through the back of the film. This makes possible high speed motion pictures of mechanical action with its electrical aspects simultaneously superimposed *on the same 16mm film.* When projected at normal speed, you get a complete picture of combined mechanical and electrical action slowed down as much as 200 times.

This basic improvement has countless new applications for solving design, production, and product performance problems through high speed movies, particularly those involving electrical equipment. Since an argon lamp times the film travel, extremely accurate analysis is possible. This unique tool may be the answer for which you have been looking. Further information on this new feature and a copy of the booklet, "Magnifying Time," will gladly be sent on request.

EASTMAN KODAK COMPANY
*Industrial Photographic Division*
Rochester 4, N. Y.

Kodak

BREVITY—Identify by IEN - 10368 if you write the maker

PROVIDES
Valve Combinations
FOR 90% OF
INDUSTRIAL PIPING

**Jenkins Fig. 106-A Series**

● With only four bodies and a handful of interchangeable parts, you can assemble 18 different valves of the 106-A "family". Meeting 90% of all industrial piping needs, you can understand why the 106-A Series is so justly famous. The renewable disc, fitted in the slip-on stay-on disc holder, assures drop-tight closure and lasting economy under the toughest service conditions.

**NEW 12 PAGE FOLDER NOW READY,** describing the many easily-assembled combinations of the 106-A "family" of Renewable Composition Disc Bronze Valves and including a Disc Guide. Ask your Jenkins Distributor for it. Jenkins Bros., 80 White St., New York 13, N. Y.

LOOK FOR THIS DIAMOND MARK
JENKINS VALVES
TYPES, SIZES, PRESSURES, METALS FOR EVERY NEED

BREVITY—Identify by IEN - 10369 if you write the maker

Power failure is no light matter!

FAIRBANKS-MORSE
GENERATING SETS

Many things can cause power failure—fires, explosions, traffic accidents, human error. And all of them can lead to injuries, property damage—even death. Then may come lawsuits and staggering debts.

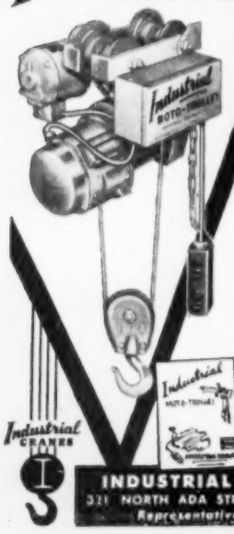
*Your own business is not immune.* But the severity of the disaster can be minimized if you have a Fairbanks-Morse Generating Set standing by to cut in instantly when city or rural high line service is halted.

A Fairbanks-Morse Generating Set is the cheapest insurance you can buy! Ask your local Fairbanks-Morse dealer to show you why. Or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
*a name worth remembering*

BREVITY—Identify by IEN - 10370 if you write the maker

Industrial
MOTO-TROLLEY



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST...
ADJUSTABLE TO ACCOMMODATE WIDE VARIETY OF BEAM SIZES

● Crown-tread machine steel wheels with hardened drivers.
● Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
● Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
● Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
● 4-button control station operates single speed trolley and hoist motions.

Industrial CRANES

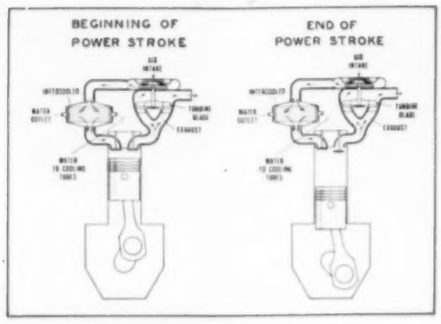
*Write for Literature*

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET · CHICAGO 7, ILLINOIS
*Representatives in Principal Cities.*

BREVITY—Identify by IEN - 10371 if you write the maker

**ENGINE . . Supercharged diesel 425 to 3,200 hp. capacities at 450 rpm.**

Source: NORDBERG MFG. CO.
3071-75 S. Chase Ave., Milwaukee 7, Wis.




**Supairthermal** trade names a new line of engines for operation on diesel fuel, Duafuel or spark-fired gas. Chief characteristic is the engine's ability, for any given size, to produce 30 per cent more power than was possible for the conventional supercharged engine, previously built by the company, with no greater heat to the cooling water and without increasing the internal surface temperatures or pressures.

**This is accomplished** by blowing a large amount of cooling air through the cylinders and out the exhaust pipe, by delivering air to the cylinders at a pressure that will provide 30 per cent more by weight as compared to previous designs, by employing an intercooler on the discharge side of the turbo-charger to cool the intake air before it enters the cylinder, by closing the intake valve before the end of the intake stroke so air within the cylinder is expanded from 15 to 6 lb. at full load with a resulting cooling action through 50 deg. F. The point at which the intake valve closes during the intake stroke is controlled by the pressure of the intake air manifold.

**Three pound pressure difference** exists between the input to the turbocharger and the output of the blower to provide a high rate of scavanging air flow that removes exhaust gas and cools the combustion-chamber surfaces. Air enters the cylinder at 15 lb. and 100 deg. F. As shown in Fig. 3, the intake valve closes 45 deg. before the end of the stroke. Air inside the cylinder expands from this point to the end of the stroke. Both valves are closed in Fig. 5 and air inside the cylinder has expanded to 6 lb. at 50 deg. F., removing additional heat in the combustion chamber surfaces as compression begins.

**At the end** of the compression stroke the combustion chamber contains 30 per cent more weight of air than the conventional design with temperature at 792 deg. F. and pressure at 648 pounds. Combustion continues from the start of the power stroke until the piston has traveled 10 percent of its stroke. Gas temperature at this point is 3,120 deg. F. and pressure is 850 pounds. Expansion then begins. Temperature is 1,232 deg. F. and pressure is 62.8 lb. when the exhaust valve opens. Although the total heat dissipated to the water jackets remains the same as in a conventional supercharged engine, the increased power output results in 25 per cent less heat loss to the cooling water per horsepower hour.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

FIND WHAT YOU WANT?
All products and services are indexed on page 118

BREVITY—Identify by IEN - 10372 if you write the maker

EDWARD E. ROBINSON

METERING PUMP
Pots Transformers
for FTR FASTER

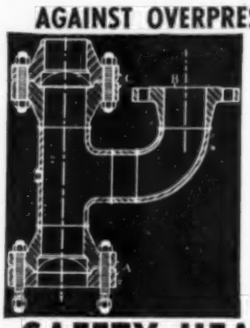
Federal Telephone and Radio Corporation reports increased production and reduced loss of compound in potting transformers by using the Robinson Metering Pump. You, too, may benefit by investigating this new production tool.

**Specifications:** Adapts to any production technique. **Not a gravity dispenser** — Forcibly ejects hot waxes and cements. **Thermostatically controlled heat** — Variable with a maximum reservoir temperature of 450°F. **Motor driven, clutch actuated** — 2/3 second per ejection. **Variable discharge** — Ejection changed in 2 seconds, without tools. **Reduced unit costs** — No skilled operator required. Saves material — reduces rejects. Write for Bulletin No. 2A.

EDWARD E. ROBINSON
INCORPORATED
95 PARK AVENUE · NUTLEY 10, N. J.

BREVITY—Identify by IEN - 10373 if you write the maker

TRIPLE PROTECTION
AGAINST OVERPRESSURE



Your relief valve (B) will function immediately when the disc ruptures at SAFETY HEAD (A). If the valve capacity is inadequate, the pressure will continue to rise to the rupture pressure of SAFETY HEAD disc (C). A much greater discharge will then be realized because of the full pipe-sized, unrestricted opening!

SAFETY HEAD DUAL ASSEMBLY

SAFETY HEAD (A) and relief valve are primary relief; SAFETY HEAD (C) is secondary. Protects relief valve from contamination. Acts instantly. Fabricated to your order.

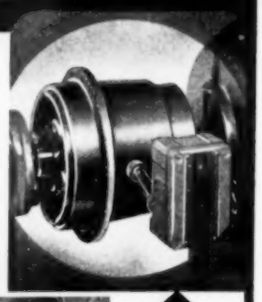
*Free catalog, specifications, prices available. Write today.*

BS&B
BLACK, SIVALLS & BRYSON, INC.
Advertising Department Room R-31L
7502 East 12th St. Kansas City 3, Mo.

BREVITY—Identify by IEN - 10374 if you write the maker

Can it improve YOUR PRODUCTS? YOUR PRODUCTION?

ANCHOR TORQUE-SENSITIVE MECHANICAL Control



COUPLINGS for all direct drives

(Incorporates standard flexible coupling) Operating range 10 to 2,000 inch pounds.

PULLEYS for belt or chain drives
Operating range 20 to 10,000 inch pounds

● These automatic mechanical units make use of increasing torque to control the operation of machinery. They protect machinery from overload and reduce "down time" by eliminating sheared pins. They will also operate signals to give ample warning of build up in load.

Since 1938 many large industries have specified ANCHOR CUT-OUTS. They are the established "protection method" for the conveyor industry.

WRITE FOR CATALOG 50A

ANCHOR STEEL & CONVEYOR CO.
DESIGNERS & MANUFACTURERS
6906 Kingsley Ave., Dearborn, Mich.

BREVITY—Identify by IEN - 10376 if you write the maker

## Sheehan's TWO-PLANE PRESS CONVEYORS SENSATION at CHICAGO SHOW

Here's the revolutionary Sheehan Model B Press Conveyor, equipped with a Flat-Wire Metal-Mesh Belt, that has Material-Handling men talking and marvelling at its performance. Think of it—at the loading end, top of belt is actually within 8 inches of floor, and with unusual two-plane design, conveyor can go under the back of presses, thereby saving working space and minimizing need for cumbersome chutes. Use of positive-drive sprockets in load-center of flat-wire belt, assures no belt slippage—oily conditions included.

**LOWER-COST LONGER-LIFE**
Sheehan Press Conveyors Can Solve Your Press Room Problems!

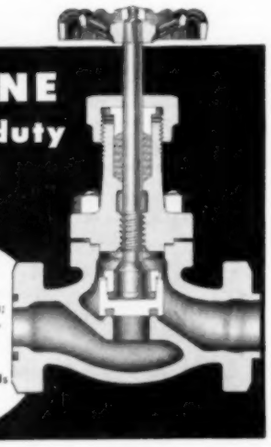
Investigate the many construction and safety features that make Sheehan Press Conveyors outstanding in performance and economy!

Write today for literature on sizes, special applications and cost data. You will be surprised at Sheehan's high quality and low prices.

R. T. SHEEHAN CO. PLYMOUTH, MICH.

BREVITY—Identify by IEN - 10377 if you write the maker

## CRANE heavy-duty all-iron valves



No. 1501, Globe, Flanged
Working Pressures: 300 pounds ammonia; 500 pounds oil, gas, or air up to 100 F.
Sizes: ½ to 4-inch
Tested at 300 pounds Air-under-Water

### FOR SAFER CONTROL OF HAZARDOUS FLUIDS

Recommended especially for ammonia service, Crane Ferrosteel valves also find wide application on air, gas, oil, and chemical lines requiring heavy duty valves. Special Crane seating design and rugged construction make these valves highly effective for safe and economical handling of deadly or hazardous fluids.

**TIGHT SEATING**—Two disc seat combinations available: (1) special lead-faced disc and integral body seat rings; (2) case-hardened steel disc and renewable steel seat rings.

**EXTRA-TIGHT STEM SEAL**—Stuffing box is unusually deep. Machined "back seating" shoulder on stem permits repacking when valve is wide open.

**RUGGED CONSTRUCTION**—Heavy, massive body sections help resist distortion. Bolted bonnet provides liberal strength; male and female joint eliminates danger of gasket blow-out.

**LEAKPROOF END CONNECTIONS**—Flanged valves have tongue and groove faces. Screwed valves have long threads with recesses for sealing with solder.

**COMPANION LINES** of check valves, expansion valves, flanged or screwed fittings, flanges, unions, and return bends are available. Ask your Crane Man about the complete line, or WRITE FOR CIRCULAR 520.

CRANE CO.
836 South Michigan Avenue
Chicago 5, Ill.
*Branches and Wholesalers Serving All Industrial Areas*

No. 1507½, Check, Screwed
Sizes: ½ to 2-inch

No. 1505, Angle, Screwed
Sizes: ¼ to 3-inch

EQUIPMENT FOR EVERY PIPING SYSTEM

# CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

BREVITY—Identify by IEN - 10379 if you write the maker

## PAINTING . . Self-adhesive mask pre-cut to cover specified areas

Source: W. H. BRADY CO.
1600-04 E. Spring St., Dept. 495, Chippewa Falls, Wis.

**Quik-Masks** trade names new self-adhesive pre-cut masks, similar to the company's previously developed line of self-adhesive labels. The new units are available on dispenser cards from which they can be lifted as they are used or with individual liners covering the adhesive face. Center overlapping arrangement of the liner permits quick removal for application. The masking material itself is Scotch Brand self-adhesive masking tape.

**Designs** can be supplied for application over areas such as dials, name plates, finished openings, threads, engraved and embossed letters, plated and polished sections, machined areas, gage faces, for protection during operations such as cleaning, buffing, spray painting, plating, machining, tumbling, sand blasting. When no other work is required that might mar the protected surface or permit entry of foreign matter into the openings, the mask can be removed. It peels clean.

BREVITY—Identify by IEN - 10380 if you write the maker

## SOLDERING . . Rod for aluminum melts at 400 deg., flows at 450 deg. F.

Source: ALL-STATE WELDING ALLOYS CO.
271-5 Ferris Ave., White Plains, N. Y.

**Is resistant to corrosion**

**No. 37 Aluminum** designates a new solder rod for use with a soldering iron or by indirect heating. The rod is employed with the company's No. 37 Brazaloy Flux. Application is intended on all types of aluminum except 24ST. It can be used also to join aluminum to other metals. Sizes range from ⅛ by 18 in. to ¼ by 14 in. in 5-lb. packages. One pound of the flux is required for each 10 lb. of rod.

BREVITY—Identify by IEN - 10381 if you write the maker

## VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: CLEVELAND VIBRATOR CO.
2736 Clinton Ave., Cleveland 13, Ohio

**Noiseless operation** characterizes this new Type-AC pneumatic vibrator. It is designed for application where vibration is required close by employees and where noise would be a major factor. Quiet operation is obtained by cushioning the reciprocating action of the chromium-plated piston by air pockets at each end of the vibrator cylinder. Speed and intensity of the vibration can be varied by controlling flow of air. The unit weighs a little under 3 pounds. It measures 6½ by 1½ in. in overall dimensions.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10382 if you write the maker

## keep HANDS and FINGERS away from PRESS RAM

# LITTELL Air Blast Valves

Eject Automatically by Air . . . not by Hand

**SAVE TIME** . . . Faster production and lower labor costs
**SAVE AIR** . . . Reduce air consumption 92 percent
**SAVE DIES** . . . No damage to dies due to clogging
**SAVE HANDS** . . . Keep operators' hands and fingers out of danger zone
**SAVE MONEY** . . . Insurance premiums are lower when accidents are reduced.

**QUICKLY INSTALLED**—Littell Air Blast Valves can be installed on any make or size press in only a few minutes.

F. J. Littell MACHINE CO. AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —

Write for Catalog

BREVITY—Identify by IEN - 10383 if you write the maker

When the motor for this cullet crusher was equipped with a HYDRO-SHEAVE, the acceleration was so smoothed out that the starting current was reduced from 400 amps to 180.

Running current was reduced from 40 amps to 18 amps. Moreover, a 15 hp motor replaced a 25 hp, and plain across-the-line starting switch was used. Learn more about the amazing savings being made with HYDRO-SHEAVE Drives. They slip on right over the motor shaft—are installed in a few minutes. Write for Bulletin No. 145-B and Installation Reports Numbers 1 to 14.

TWIN DISC — Clutches & Hydraulic Drives

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

BREVITY—Identify by IEN - 10384 if you write the maker

## a Wealth of Technical Data on B&W STAINLESS TUBING for Pressure and Mechanical Uses

**CHECK—CLIP—AND MAIL** this listing for free copies

- ☐ TB-18—Properties and Methods of Working Seamless and Welded B&W Stainless Croloy Tubes and Pipe.
- ☐ TB-19—Condensed Technical Data on 10 Popular Analyses.
- ☐ TB-332—B&W Stainless Pipe—Seamless and Welded.
- ☐ TDC-130—B&W Stainless Croloy 18-8S (Type 304) Pipe and Tubing.
- ☐ TDC-133—B&W Stainless Croloy 16-13-3 (Type 316) Pipe and Tubing.
- ☐ TDC-134—B&W Stainless Croloy 25-20 (Type 310) Pipe and Tubing.
- ☐ TDC-140—B&W Non-Hardening Ferritic Stainless Steel Pipe and Tubing.

TA-16435

THE BABCOCK & WILCOX TUBE COMPANY
Executive Offices: Beaver Falls, Pa. General Offices and Plants: Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing; Alliance, Ohio—Welded Carbon Steel Tubing

BREVITY—Identify by IEN - 10385 if you write the maker

## STONEWALL BOARD

FOR EXTERIOR OR INTERIOR INDUSTRIAL CONSTRUCTION

Whenever a structure or manufactured product must resist fire, extremes of weather, rust, rot, rodents, or corrosion, Ruberoid Stonewall Board may easily be the most efficient answer to the problem. Quickly applied, the big 4' x 8' boards cover more square feet with less labor. And it is strong! Asbestos fibres reinforce Portland cement, resulting in high tensile and rupture strengths. And Stonewall is easy to "work" . . . just score and break to size, or it can be cut with a square shear or a carborundum wheel.

Ruberoid Stonewall Board makes tough, durable indoor and outdoor walls and partitions — they can't rot or decay, are easily cleaned, need no painting. It is also the perfect material for ceilings, barriers, hoods, ducts, humidifiers, stove and refrigerator linings or for any purpose where moisture or heat are hazards.

The RUBEROID Co.

MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

Building Materials for Industry, Home, and Farm

Executive Offices: 500 Fifth Avenue, New York 18, N. Y.

BREVITY—Identify by IEN - 10386 if you write the maker

## Air Operated ROTARY WORK FEEDER

Deftly holds and delivers small parts to drill, tap, swage, stake, etc. Stations accurate to .002". Guaranteed against over-travel or "skipping." Indexes as slow or fast as you like, up to 10,000 per hour. Compact and sturdy, easy to tool and hook up.
Standard dial plate 10"; available in 12". For a new job, simply tool up a new dial. Readily combines with "MEADMATIC" Timer, Air Hammer, Air Press, Drill Presses, etc. — to make almost completely automatic machine — operator merely loads.

*Write for full details.*

**MEAD** SPECIALTIES COMPANY

4114 N. Knox Ave., Dept. EA-101, Chicago 41, Ill.

BREVITY—Identify by IEN - 10387 if you write the maker

**More Power**

**in Less Space**

**FOOTE BROS.**

**PARALLEL SHAFT HELICAL GEAR DRIVES**

Precision processed gearing, improved materials and heat treatment assure top performance — permit selection of smaller size, lower weight units. Overlapping tooth action, close backlash tolerances, reinforced housing design, plus antifriction bearings throughout, mean smoother, quieter operation.

*Write for Bulletin MPB*

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 South Western Boulevard • Chicago 9, Illinois

FOOTE BROS.
*Better Power Transmission Through Better Gears*

BREVITY—Identify by IEN - 10388 if you write the maker

**Superior Times**

## SMALL TITANIUM TUBING MAKES BIG NEWS

Titanium . . . today's youngest and most virile metal, is now available in small diameter tubing. Approximately 60% of the weight of stainless steel, Titanium tubing possesses an unusual combination of mechanical and physical properties. WELDRAWN* Titanium tubing, of commercial purity or better, has for many months been in limited production at Superior. Sizes now being drawn range from ⅛" O.D. to 1¼" O.D. with a maximum wall of .083". For technical information about properties and applications write for Data Memorandum #10, Superior Tube Company, 2016 Germantown Avenue, Norristown, Pennsylvania.

**Superior**
THE BIG NAME IN SMALL TUBING

All analyses .010" to ⅛" O.D.
Certain analyses (.035" max. wall) up to 1⅛" O.D.

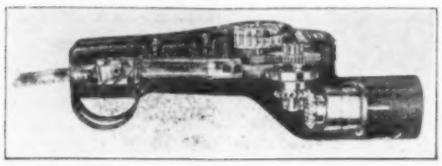
*Reg. U. S. Patent Office — Superior Tube Co.

West Coast: Pacific Tube Company
3210 Smithway Street, Los Angeles, California • UNderhill 0-1331

BREVITY—Identify by IEN - 10389 if you write the maker

## SAWING . . Portable tool attachment reciprocates blades, will pierce work

Source: R. C. S. TOOL SALES CORP.
23-27 N. Ottawa, Dept. P-68, Joliet, Ill.



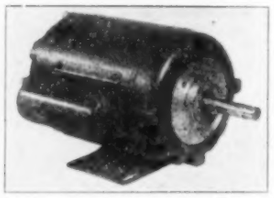
**New information** has been provided by the manufacturer in connection with the portable sawing head, previously described IEN-10256-50. The internal view of the mechanism shows the new one-piece heat-treated alloy steel piston with its separate clamping jaw, the hardened drive gears and the one-piece connecting rod. The complete assembly is now sealed against grease leakage. The shank which applies on a standard portable tool has also been redesigned.

**No starting hole** is required since the saw blade can be held against the work to pierce it. Application is in a ¼-in. or ⅜-in. electric or pneumatic drill or on a standard flexible-shaft machine. The head measures 10¾ in. in overall length.

BREVITY—Identify by IEN - 10390 if you write the maker

## MOTOR . . Single phase ac., 1,725 rpm., ⅓ and ½ hp. ratings

Source: OAK ELECTRIC MOTORS INC.
751 Ells, Burr Oak, Mich.



**Formed steel** main housing with die-cast aluminum end housings enclose the rotor in this new Model 13-1C motor. The rotor shaft can extend from one or both ends and is supported in ball bearings with grease sealed in. The shaft extension can be ½ or ⅝ in. in diameter or both. The motor is available for operation on 110/220 volt, 60-cycle ac. It employs a capacitor for starting service. Overload protection can be specified. Overall dimensions are 6¼ by 11 by 6½ inches. The shaft extension measures 2¾ inches. Weight is 31 lb. for the ⅓-hp. unit, 32 lb. for the ½-hp. size.

BREVITY—Identify by IEN - 10391 if you write the maker

**PIPE . . Book on selection and use of pipe, valves, fittings by type of service**

McGraw-Hill Publishing Co.
327 W. 41st St., New York 18, N. Y.

**"Industrial Piping"** titles new 400-page book, intended as a practical reference particularly for chemical and process work. List price is $8. It starts with flow sheets, plot plans and design procedure, then follows with information on pipe, valves and fittings for steam, water, oil, gas, air, instrument lines, alloy piping, insulation. One chapter covers plastic, glass, stoneware and other pipe. There is a separate chapter on cost estimating which compensates for variations.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10392 if you write the maker

## Instruments for Measuring AIR TEMPERATURE and VELOCITY

### TEMPSCRIBE Recording Thermometer

Available in 10 different ranges to cover −30°F to +100°F temperatures, and with spring-operated chart drives for any of the following chart rotations: 8 hours, 24 hours or 7 days.

This entirely self-contained, compact and reliable temperature recorder automatically writes a continuous record of temperature changes on a replaceable chart. Record shows at a glance maximum and minimum temperatures and the duration of temperatures above or below any given point; also shows the exact time of every temperature change and how rapidly it takes place. Recording pen and bi-metallic element are built in hinged, removable door which is also front of instrument. Thus, by merely changing doors it is easy to interchange temperature ranges. Instrument is 8" tall, 5½" wide and 4½" deep. Charts are 4½ inches in diameter.

*Write for Bulletin I-715*

### FLORITE Anemometer

In principle, this unique instrument operates as an anemometer but provides instantaneous, direct readings of air velocity without timing, calculations or reference to charts. Readings are obtained by holding the instrument in the air stream so that air blows against its circular face, causing rotation of a multi-blade rotor mounted in instrument housing. The circular scale surrounding the rotor instantly turns to correct air velocity reading under an index pointer on scale window. Furnished with detachable handle (not shown) and leather case.

Available in two styles. One with a scale of 0-1000 ft./min., and the other with a double scale of 0-3000 ft./min. and 0-35 miles per hour.

*Write for Bulletin I-760*

**BACHARACH Industrial Instrument Co.**
7000 BENNETT STREET • • PITTSBURGH 8, PA.

BREVITY—Identify by IEN - 10393 if you write the maker

## Bin Stuck Lately?

Don't ruin your Bins

**Vibrate them with a TYPE F CLEVELAND AIR VIBRATOR**

• Steel Chips . . . Dry Colors . . . Concrete . . . Fertilizer . . . Sand . . . Coal . . . Soap . . . Sawdust . . . Vegetables . . . Chipped Ice . . . Meat . . . Candy . . . Wood Chips . . .

Or any other 'granulars' free up fast with a Type F Cleveland AIR Vibrator. Eliminate plugged or arched conditions. Write for Catalog No. 105 for complete details.

THE CLEVELAND VIBRATOR COMPANY

2737 Clinton Ave. • Cleveland 13, Ohio

BREVITY—Identify by IEN - 10394 if you write the maker

## NOW . . . You can Choose The RIGHT Masonry Drill Bit for EACH Job

*By using this handy Guide*

**NEW — FREE**

Send for your copy

Easy to use. Practical. Locate material you want to drill and hole size. There you will find bit recommended. Our complete line of masonry drill bits (Cyclo-twist, Cyclo-Core and Thunderbolt) will drill ANY size hole in ANY masonry material.

**New England Carbide TOOL CO., INC.**
60 BROOKLINE STREET, CAMBRIDGE 39, MASS.

BREVITY—Identify by IEN - 10395 if you write the maker

## VERTICAL or HORIZONTAL

THE MOST
*COMPACT CONVEYOR*
FOR BULK MATERIALS

FORT WORTH Screw Conveyors and vertical Screw Elevators provide the most compact means of conveying or elevating bulk materials, such as grain and other free flowing products. Space occupied is less than half that of most other types of conveyors.

Vertical screw elevators are used to lift materials up to 70 feet, depending on the nature of the product.

Initial cost is low.
A minimum amount of upkeep is required.

WRITE FOR CATALOG 300

FORT WORTH V-BELT DRIVES SCREW CONVEYORS and ACCESSORIES SCREW ELEVATORS INDUSTRIAL FANS

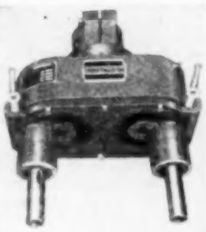
**FORT WORTH STEEL & MACHINERY CO.**
DEPT. 210, 3600 McCART ST.
FORT WORTH, TEXAS

BREVITY—Identify by IEN - 10396 if you write the maker

# Performance Proved

## THRIFTMASTER

Gear Driven Eccentric Type
**ADJUSTABLE**
**DRILLHEADS**



- Rugged FULL BALL BEARING Construction — hardened parts used throughout.
- 31 STANDARD MODELS — to fit a wide variety of specifications.
- DRILLING CAPACITIES — from #60" to 1½" in Steel — rated to drill disintegration.
- FULLY ADJUSTABLE — from 1" min. to 14.2" max. — 2 to 4 Spindles.
- For Drilling, Reaming, Tapping and other machining operations
- Prompt Delivery on Standard Heads.

**Full Line of Standard Universal Adjustable and Special Fixed Center Drillheads . . . Automatic Reverse Tap or Drill Units. Write for the Thriftmaster Catalog.**

**Subsidiary of Thomson Industries, Inc.**

**THRIFTMASTER PRODUCTS CORPORATION**
1040 N. Plum St., Lancaster, Pa.
also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS
4 Sizes • Friction & Positive Drives. Capacity (2-24 to 3" in Steel)

BREVITY—Identify by IEN - 10397 if you write the maker

**to measure** *tension, traction or weight*

**do it accurately with**

**DILLON DYNAMOMETERS!**

COST IS NEGLIGIBLE

**Rugged, compact, accurate; DILLON DYNAMOMETERS are simple and easy to handle and read.**

From simple weighing to intricate torque tests, the DILLON DYNAMOMETER is doing the job with the same unfailing accuracy, versatility and rugged dependability which has made it a "by-word" in industry throughout the world. Your own plant becomes your testing laboratory with a DILLON DYNAMOMETER.

Built to take years of hard, daily use, the DILLON will pay for itself many times over.

*Light:* 8 lbs. 4 ozs. (3" dial model.)

*Compact:* 8¼" long, 6¼" high, 3" thick.

*Accurate:* Calibrated in Certified Laboratory Testing Machine.

The DILLON DYNAMOMETER is made in 9 different capacities: 0-500 lbs. up to 0-50,000 lbs. All have max. hand, shackles, safety glass crystal. There are thousands in use today by leading companies all over the world. Write for profusely illustrated Bulletin D-1.

**W. C. DILLON & CO., INC.**

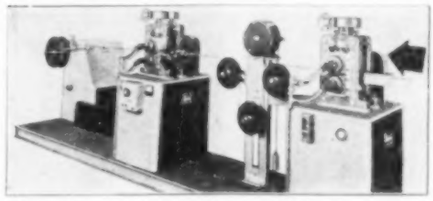
*Precision Instruments for Precision Testing*

1421-K S. Circle Avenue • Forest Park, Ill.

BREVITY—Identify by IEN - 10399 if you write the maker

**ROLLING . . Two-stand mill flattens round wire to make zippers**

Source: STANAT MFG. CO.
47-30 37th St., Long Island City 1, N. Y.



**Round wire,** to be flattened, is threaded into the first stand of this new Model T-400 two-stand mill. Then it is passed over and under the sheaves on a dancer mechanism and through the second stand to a recoiler. Speed is set by adjusting a rheostat on the second stand. Operation is synchronized between the two strands by action of the dancer which is mechanically connected to a second rheostat. Drive is from an ac. source to a motor generator supplying dc. to the two motors on their respective stands.

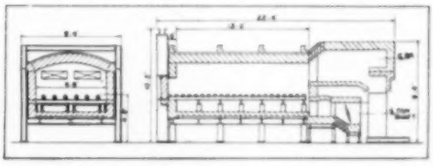
**The rolls** measure 6 in. in diameter by 4 in. in face width. They are mounted on roller bearings and are equipped with separate thrust bearings. They are adjusted by means of hardened and ground feed screws connecting through worm gearing to single handwheels. A compensating device adjusts for parallelism. Water cooling is employed.

**Edging rolls** ride on tapered roller bearings and are provided with a release to assist in threading the wire. All of the rolls can be removed and replaced quickly. The machine occupies approximately 5 by 15 ft. of floor space. Several types of recoilers are available to meet given requirements.

BREVITY—Identify by IEN - 10400 if you write the maker

**HEAT TREATING . . Gas fired furnace to finish anneal coils of brass wire**

Source: SURFACE COMBUSTION CORP.
2373-77 Dorr St., Toledo 1, Ohio



**Low head room** for installation in a building with 12-ft. ceiling clearance characterizes the layout of this new gas-fired finish-annealing furnace for coils of brass wire. Work is handled on a chrome-iron pan measuring 5½ ft. in width by 12 ft. in length and ¼ in. in thickness. The pan carries ⅜-in. perforations on 1-in. centers. It rides rollers into and out of the furnace with a transfer car at the front.

**The furnace** is essentially oven-type design with the company's gas-fired air heater providing the heat source for a maximum temperature of 675 deg. C. The heater is a refractory-lined unit located at the upper rear of the furnace and equipped with a low-pressure automatic proportioning velocity burner and constant-burning pilot. The burner uses carbureted water gas and has maximum fuel consumption of about 3,000 cu. ft. per hour.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10401 if you write the maker

**a WELL-CAST lightweight magnesium or aluminum casting is your ready answer**

**40** Years' experience producing quality lightweight castings for the aircraft, textile, pneumatic tool, automotive, domestic appliance, and other diversified industries everywhere.

*Well-Made Wood and Metal Patterns*
*Ampco Bronze Castings*

**THE WELLMAN BRONZE & ALUMINUM CO.**
2510 EAST 93rd STREET • CLEVELAND, OHIO

BREVITY—Identify by IEN - 10402 if you write the maker

**helpful HYDRAULIC PRESS catalog**

**75** STANDARD MODELS

Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

*do ALL you CAN do . . . with*

**HANNIFIN**

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Rivaters • Air Control Valves

BREVITY—Identify by IEN - 10403 if you write the maker

This A. C. & Y. covered hopper car shunted car maintenance costs right out of the picture! It hauled soda ash, which quickly destroys ordinary car coatings, for 35 months of almost daily service —*without the need of refinishing!*

Credit goes to its coating of Pittsburgh "Carhide" freight car finish based on VINYLITE Brand Resins. Why . . . ?

Because properly formulated coating systems based on VINYLITE Resins strongly resist alkalies, and most strong acids, too. In addition, they resist crude oils, greases, alcohols, brine and most other chemicals. They stay intact against abrasion, impact, thermal shock, water, salt air, and corrosive industrial atmospheres.

Repeated scrubbing does not affect their protective qualities. They dry so fast that one-day finishing schedules are easily maintained.

They can protect your equipment, too, and drastically cut your maintenance costs! Write today to Dept. KY-73 for details and a list of representative suppliers.

Data on Pittsburgh "Carhide" courtesy Pittsburgh Plate Glass Company, Industrial Paint Division, Pittsburgh, Pa.

**Vinylite** BRAND **RESINS**

TRADE MARK

**BAKELITE COMPANY**
*A Division of*
*Union Carbide and Carbon Corporation*
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 10405 if you write the maker

## H & K PERFORATED MATERIALS offer you . . .

AVAILABILITY
H & K is prepared to perforate metal, plastic, fabrikoids, masonite, plywood and many other materials available in sheet, plate or coil form—in thicknesses from tissue thin to 1" steel.

PATTERNS
A wide selection of patterns are available in standard round, square, slot, oblong, triangular holes and also special holes such as indented, lipped, burred, tapered, stabbed, etc.

ACCURACY
Hole sizes can be held to a tolerance of ± .0005" when required. Holes are accurate and uniform in size, shape and spacing.

OPEN AREA
Various spacings and arrangements of our perforations provide wide range from which to select a required percentage of open area.

SURFACE
Smooth and easy to clean.

*Send us your specifications for recommendations without obligation.*

**The Harrington & King Perforating Co.**

If you do not have H & K Catalog #62 — write for it!

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, N. Y.

BREVITY—Identify by IEN - 10406 if you write the maker

## Specifically Designed for WATER PRESSURE CONTROL

**Golden-Anderson Cushioned Water Pressure Reducing Valve**
Used to protect water lines where high initial pressures would cause serious damage to distribution mains, this very sensitive valve will maintain a uniform delivery pressure. Bulletin W-3 will interest you.

**Golden-Anderson Cushioned Surge Relief Valve**
This valve is used to protect water lines against excessive pressures caused by surges in the system, and will open immediately when inlet pressure exceeds the adjustment of the pilot. Bulletin W-2 sent on request.

For over 50 years, Golden-Anderson has specialized in designing and manufacturing pressure control valves. The patented air and water cushioning feature effectively prevents any bang or hammer.

May our experienced engineers help you with your water pressure control problem?

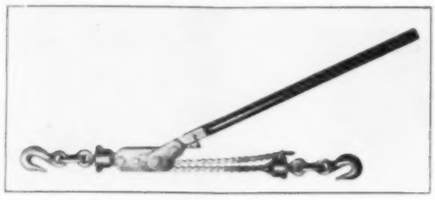
**Golden Anderson Valve Specialty Company**
2079 KEENAN BUILDING • PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 10407 if you write the maker

BREVITY—Identify by IEN - 10408 if you write the maker

## HOIST . . Hand ratchet unit to lift, pull, bind, rates 3,000 pounds

Source: COFFING HOIST CO.
802 Walter St., Danville, Ill.



**New size** has been added to the company's line of ratchet-operated units for load lifting, pulling and binding. The line now includes ratings of 500, 1,000 and the new 3,000-lb. unit. Operating the hand lever rides the load chain over a sprocket. Sufficient chain length is provided for 20½ in. of movement in the 3,000-lb. size. Longer movement can be provided by specifying a longer chain.

**For load binding,** the chain can be pulled tight to secure the load and later on can be tightened again if slack should develop due to the load settling. With one of the hooks suspended from overhead, the unit operates as a hoist. Loads can be pulled along a floor in the horizontal position shown.

BREVITY—Identify by IEN - 10409 if you write the maker

## DRYING . . Hot air blower for washrooms, dries hands and face

Source: CHICAGO HARDWARE FOUNDRY CO.
3501-5 Commonwealth Ave., North Chicago, Ill.

**New housing** made of porcelain-enameled cast iron, a new design of pushbutton for starting and a circuit breaker that shuts off the internal heating element when the air inlet is obstructed for any reason have been added to the company's Sani-Dri electric dryer, previously described IEN-11400-50. Pressing the pushbutton starts the ball-bearing motor to operate a blower that drives air over the electric heating element. Closing the motor circuit also starts a timer which opens the circuit after a set operating interval. The unit is equipped with a mounting plate for attachment to a wall. It operates on 110-volt or 220-volt 60-cycle ac. The heated air issues from a swivel nozzle.

BREVITY—Identify by IEN - 10410 if you write the maker

## MANPOWER . . How to feed employees described in booklet that summarizes 240-plant survey

Paper Cup & Container Institute
551 Fifth Ave., New York 17, N. Y.

**"Feeding the Factory Worker"** is title of new 40-page booklet based on a survey made by the Institute's Field Research Division. It describes types of feeding arrangements, the problems involved, along with a number of suggestions.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10411 if you write the maker

BREVITY—Identify by IEN - 10412 if you write the maker

## ONLY CURTIS OFFERS ALL THESE ADVANTAGES

**Availability**
14 sizes — ⅜" to 4" O.D. — in stock at all times for immediate shipment. Every facility for special specification jobs.

**Simplicity**
Fewer parts, simpler construction, make assembly and disassembly easy. Greater strength saves weight, space, material.

**Government Test**
Complete equipment and personnel for testing to Government specifications in the plant before shipment insures quality.

BREVITY—Identify by IEN - 10413 if you write the maker

## TO SPEED PROCUREMENT OF ELECTRICAL ITEMS— look behind the Graybar tag

### LOOK AT GRAYBAR METHODS

An intimate knowledge of supply sources . . . a nation-wide network of warehouses . . . up-to-the-minute inventory methods — all these stand behind Graybar's ability to deliver the goods.

When you order from Graybar, you take full advantage of efficient, shortage-beating distribution methods — methods that, under today's uncertain conditions, help assure you of the *fastest possible* deliveries of vital electrical supplies.

### LOOK AT GRAYBAR MEN

For technical assistance on problems arising in any of the major electrical fields, you can count on the help of a Graybar Specialist. A long familiarity with electrical products enables him to help you get the job done efficiently and without delays.

Local Graybar Representatives — always close at hand — can provide forecasts of delivery conditions and defense regulations effective in your area.

### LOOK AT GRAYBAR MATERIALS

Graybar distributes the products of more than 200 of the nation's leading manufacturers. A comprehensive catalog and quotation service covering over 100,000 electrical items is constantly available to help you or your electrical contractor compile job specifications and estimates. For lighting, communication, ventilation, power, or wiring, you can be sure of materials that are right for the job — via Graybar.

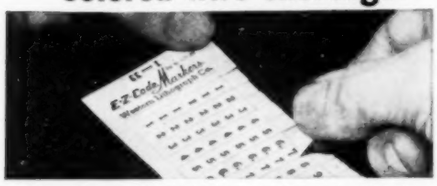
*Graybar Electric Company, Inc. Executive offices: Graybar Building, New York 17, N. Y.* 160-1210

*Avoid electrical delays — plan ahead . . . . via* GraybaR IN OVER 100 PRINCIPAL CITIES

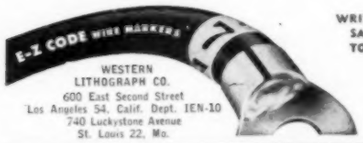
BREVITY—Identify by IEN - 10415 if you write the maker

*here's your ANSWER to the*

## colored wire shortage!




**E-Z CODE WIRE MARKERS** simplify the assembly of wiring circuits by number or standard NEMA color code–answer problems created by a colored wire shortage. They maintain accuracy...minimize rejections...simplify inspection...and get the most from new, inexperienced employees, even when assigned to the most complicated wiring projects. E-Z Codes, with the exclusive Speed-Tab, are faster to remove from carrying card, quicker to apply *(without moistening)* and adhere permanently to wire and cable, even when pulled through conduit. They are unaffected by heat and humidity. E-Z Codes are the efficient, low-cost answer to your colored wire shortage problem.




WRITE FOR SAMPLES TODAY!

WESTERN LITHOGRAPH CO.
600 East Second Street
Los Angeles 54, Calif. Dept. IEN-10
740 Luckystone Avenue
St. Louis 22, Mo.

BREVITY—Identify by IEN - 10416 if you write the maker

Sperry

*Hydraulic*

**REMOTE CONTROL**

*Provides*

**INSTANT RESPONSE**
**SMOOTH, EVEN ACTION**
**ACCURACY TO ½ OF 1°**
**EASY TO INSTALL**

Light weight, rugged, moistureproof, balanced and trouble-free, Sperry Hydraulic Controls are being employed for a wide variety of applications demanding accurate dependable control. F SERIES rated capacity 400" lbs. pressure stroke with 125" lbs. return stroke. H SERIES rated 50" lbs. pressure stroke with 15" lbs. return stroke. Intermediate transmitters available for multi-station control. Send prints and specs. Descriptive literature available. Write now.

SINGLE TUBE BALANCED SYSTEMS

**SPERRY Products, Inc.**
Danbury, Connecticut

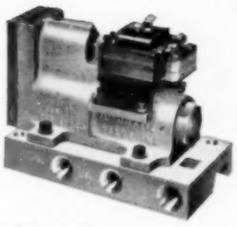
ALSO MANUFACTURERS OF METAL TESTING & MEASURING INSTRUMENTS • SELF-SEALING COUPLINGS ALLIED INDUSTRIAL PRODUCTS

BREVITY—Identify by IEN - 10417 if you write the maker

**7,632,113 OPERATIONS**

**Actual performance of a standard 3/8", 4-Way AUTOMATIC solenoid valve before maintenance was required.**

RUGGED CONSTRUCTION FOR HEAVY DUTY OPERATION
•
CYCLING TO 600 PER MIN.
•
FOR CONTROL OF COMPRESSED AIR-PRESSURES 20 TO 150 LBS.



*Available in standard pipe sizes.*

Thousands of AUTOMATIC 3-way and 4-way valves in daily operation. Write for bulletin and prices. Attractive quantity and O.E.M. discounts.

PIONEERS and SPECIALISTS in PILOT OPERATED SOLENOID CONTROLLED VALVES

**AUTOMATIC VALVE CO.**
37419 GRAND RIVER AVE., FARMINGTON, MICH.

BREVITY—Identify by IEN - 10418 if you write the maker

## INCINERATOR . . For plant refuse, 500 to 3,500 lb. per hour in four sizes

Source: PLIBRICO JOINTLESS FIREBRICK CO.
1802 Kingsbury St., Chicago 14, Ill.

**New design** of the company's standard Rubbish Destructor has been developed to assemble a ribbed steel casing with monolithic refractory lining and suitable insulation. An air-cooled steel-encased stack protects its monolithic lining from thermal shock. The lining is Plicast castable refractory. Erection is on the job by the manufacturer.

**Smallest unit** is known as Model 5R. It rates 500 lb. per hr. of waste material such as paper, cartons, floor sweepings, scrap, rags and other rubbish of a readily combustible nature. Moderate amounts of wet material can be mixed with the dry materials satisfactorily. Overall dimensions are approximately 5½ by 11½ by 7½ feet.

**Largest unit,** with rating at 3,500 lb. per hr., measures about 10½ by 19 by 10 feet. High temperature is obtained in the furnace by the action of the elliptical curved arch and the deflecting arch behind the bridge wall. The inclined grate permits charging a large volume of rubbish. Burning rate is controlled by opening or closing the ash-pit doors.

**Catalog,** 16 pages, "Plibrico Incinerators," illustrates and describes a range of sizes of portable and stationary incinerators for general and specific industrial use.

BREVITY—Identify by IEN - 10419 if you write the maker

## PUMP . . Motor driven centrifugal and receiver for condensate return

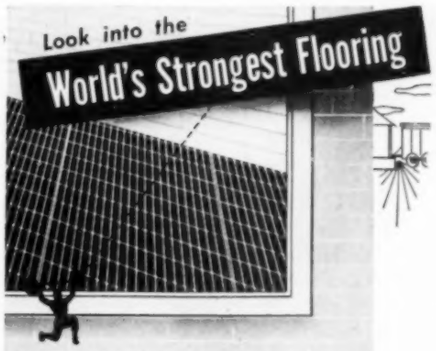
Source: ROY E. ROTH CO.
2430 Fourth Ave., Rock Island, Ill.

**Vertical pump** with direct-connected motor is assembled in a cylindrical steel or cast-iron receiver and is controlled by a float switch in this new centrifugal condensate-return assembly. The receiver is available in 10 and 15-gal. capacities. The pump will deliver against 10 to 30 lb. for water return to the boiler in a heating system. In each case the pump is supplied with a rating of 1½ gpm. per 1,000 sq. ft. of equivalent direct radiation.

**The steel tank,** with 10-gal. capacity, measures 18 in. in diameter by 9¾ in. in height and is fitted with a 2-in. inlet. The 15-gal. unit measures 22½ by 9¾ in. and also has a 2-in. inlet. The motor rates ¼ to ½ hp. It can be specified for 110/220-volt single-phase ac. or for 220-volt three-phase ac.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10420 if you write the maker




**KERLOW OPEN STEEL GRATING** will outlast the building in which it is installed. It's safer, cleaner, fireproof.

Engineering and installation tests prove that it has no peer in FLOORS • SLABS • ARMORING • DRAIN GATES • TRENCH COVERS • SAFETY STEPS. Famous for bridges and with all processing industries where durable, self-ventilating, chemical-resistant flooring is essential.

**Write for complete catalog and assistance from specialist-engineers who can solve your steel-flooring problems.**

KERLOW

**KERLOW STEEL FLOORING CO.**
23 Mallory Ave., Jersey City, N. J.

BREVITY—Identify by IEN - 10421 if you write the maker

This new three-phase Inductrol gives you more kva of regulation in a smaller floor space than ever before possible.

## General Electric's NEW INDUCTROLS

(dry-type induction voltage regulators)

**will help you get out more production**

New improved Inductrols have been introduced this year for both single-phase and three-phase circuits, 600 volts and below. These new dry-type regulators automatically maintain correct voltage on your equipment and do not require expensive fireproof vaults. The attractively styled all-steel cabinets completely enclose all live parts for greater safety. Standard automatic regulators are available for circuits ranging from 3 kva, 120 volts up to 500 kva, 600 volts.

For advice on how, when, and where to apply Inductrols, get in touch with your G-E sales representative or authorized agent.

Write for Bulletins GEC-712 and GEC-795. *General Electric Company, Schenectady 5, New York.*

**GENERAL ELECTRIC**

BREVITY—Identify by IEN - 10422 if you write the maker

## RACINE HYDRAULIC PUMPS

*Simplify your Circuit*

Less valves and controls in a circuit provide easier installation and lower initial costs.

RACINE "Variable Volume" Pumps eliminate relief valves and extra piping. They reduce horsepower requirements and avoid excessive heat losses. Over-all cost of motor and reservoir is usually reduced. Efficiency is high because RACINE Pumps "put all of the oil to work."

A wide range of governor controls provide pumping action at the proper pressure and volume to handle any given job most effectively. These interchangeable governors are an exclusive RACINE feature.

*Write for new 3-color Catalog P-10-D covering RACINE'S complete line of "Variable Volume" Pumps, Valves and Pressure Boosters.*

**OTHER RACINE HYDRAULIC PRODUCTS**

Four-Way Valves

Pressure Boosters

Pump & Reservoir Units

**RACINE** TOOL AND MACHINE CO.
1761 State Street, RACINE, WISCONSIN, U. S. A.

BREVITY—Identify by IEN - 10423 if you write the maker

## GRAMIX

bearings are self-lubricating

Gramix parts, precision die-pressed of powdered metal mixtures, are oil-impregnated during manufacture for self-lubrication. Once installed, they need no oiling, greasing, or servicing. Gramix parts require no costly machining and they stand up under all operating conditions. Write today for full facts.

THE UNITED STATES GRAPHITE COMPANY
Division of The Wickes Corporation
SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 10424 if you write the maker

## Neff & Fry Bins *defy the elements*

Coal barges were tied up to Neff & Fry Bins during an Ohio River flood. After the waters receded, the bins were as sound as ever.

Tornadoes have destroyed adjacent buildings without damaging the walls of Neff & Fry Bins.

More important, normal year-round weather has little effect on the Super-Concrete Staves of which Neff & Fry Bins are built. The staves are hard and dense. They do not rot, burn, rust, or spall. They require no face-lifting and painting, although owners sometimes paint them for esthetic reasons.

All the distinctive advantages of Neff & Fry Bins are explained in our folder, "Bins with the Strength of Pillars." Be sure to read it before you purchase structures for handling flowable bulk materials. Write for it now while the subject's on your mind.

Four Neff & Fry Grain Bins at Liberty, Ind.

Not exported except to Canada and Mexico.

THE NEFF & FRY CO. • 114 Elm St. Camden, Ohio

SUPER-CONCRETE STAVE STORAGE BINS ◀ NEFF & FRY

BREVITY—Identify by IEN - 10425 if you write the maker

## ELLIOTT TWIN STRAINERS TYPE "A"

### *Big strainer baskets need less attention*

■ The extremely large basket straining area—five times the inlet area—greatly reduces pressure drop. Another advantage is the large amount of arrested material which the basket will hold before straining capacity is reduced to the point where cleaning becomes necessary. Even when 30 percent clogged with foreign matter, the effect is barely measurable. Twin Strainers go a long time between cleanings.

*Get all the story. Write for the Type A Twin Strainer Bulletin.*

SIZES FROM 1"-UP-125 to 250 lb. PRESSURES

A-315

ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 10426 if you write the maker

## SPROUT WALDRON ROTARY FEEDERS

*CONTROL RATE OF FLOW*

*ACT AS PERCENTAGE FEEDERS*

*SERVE AS AIR LOCKS*

Standard or custom made units to be used ahead of grinders, mixers, elevators, dust collectors, etc., or underneath bins and storage tanks. These dual purpose Feeders have a wide variety of applications in the process industries. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

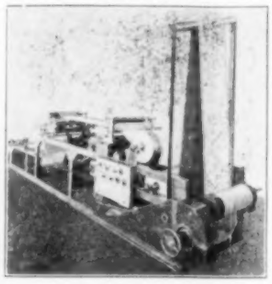
Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 10427 if you write the maker

## LAMINATING . . Roll type machine laminates fabrikoid with paper, rewinds

Source: POTDEVIN MACHINE CO. 1285 38th St., Brooklyn 18, N. Y.



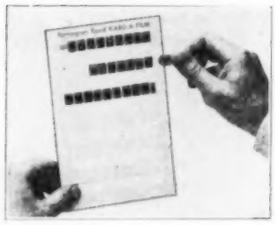
**Operating speed** is to 50 fpm. in this new laminating machine. It handles rolls to 20 in. in width of fabrikoid sheet and paper. The two feed into the machine at one end. Glue is applied and the sheets are rolled together and then passed over a heated drum to dry the adhesive. Movement from this roll is over an upright suspension roll to permit the laminated material to travel a distance of 16 ft. for adjustment to room temperature. Rewinding is on a roll at the end of the machine opposite to that at which the work enters.

**Equipment** includes variable-speed drive, double-jacketed removable adhesive tank, thermostatic heat control. Overall dimensions are 139 by 38 by 51 inches.

BREVITY—Identify by IEN - 10428 if you write the maker

## RECORD KEEPING . . File cards mount microfilm records for reference

Source: REMINGTON RAND INC. 315 Fourth Ave., Room 1618, New York 10, N. Y.



**Kard-A-Film** is a new file card available in sizes from 2½ by 3 in. to 14 by 11 in. to take 35-mm microfilm reductions of standard-size material and hold them for enlargement and copying by the company's Kard-A-Film Reader.

**Two types** of card include one that requires mounting the film by means of an acetate lamination that seals it in and protects it front and back and a second one, as shown in the illustration, in which a strip of film is slipped into position from one side. Both the card and film can be indexed. The card can be tabbed, labeled, coated or colored to find it quickly in a standard drawer.

BREVITY—Identify by IEN - 10429 if you write the maker

## MOTORS . . Commemorative issue of house publication marks company's 50th year

Louis Allis Co. 425-29 E. Steward St., Milwaukee 7, Wis.

**Special issue** of the "Louis Allis Messenger" describes early history and development of the company since 1901. Pictures show how electric motor design has changed with the years with examples of standard and special motors now made.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10430 if you write the maker

## THE WIDE BAND POCKETSCOPE MODEL S-14-B BY WATERMAN

**Another Waterman POCKETSCOPE confirming the obsolescence of conventional oscilloscopes. Characterized by wide band amplifier fidelity without peaking as well as amazing portability. S-14-B POCKETSCOPE is ideal for laboratory and field investigation of transient signals, aperiodic pulses, or recurrent electrical wave forms.**

*Wt. 14 lbs. 12"x 6"x 7"*

Vertical channel: 50mv rms/inch, with response within —2DB from DC to 700KC, and pulse rise of 0.35 μs. Horizontal channel: 0.3v rms/inch with response within —2DB from DC to 200KC, and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls, with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization, from ½cps to 50KC, with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:
S-10-B GENERAL POCKETSCOPE
S-11-A INDUSTRIAL POCKETSCOPE
S-14-A HI-GAIN POCKETSCOPE
S-15-A TWIN TUBE POCKETSCOPE
S-21-A LINEAR TIME BASE
Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC® TUBES and other equipment

WATERMAN PRODUCTS

BREVITY—Identify by IEN - 10431 if you write the maker

## Saves Time on light and HEAVY Work

**250-Watt WELLER SOLDERING GUN**

You need no other soldering tool. 5-second heating saves time on every job. Heat is instantly on . . . instantly off with trigger-switch control. Power-and-hours saved pay for your Weller Gun in a few months.

- **TRIGGER-SWITCH CONTROL**—No need to unplug gun.
- **5-SECOND HEATING**—No waiting.
- **WELLERTIP**—Rigid and braced for heavy duty.
- **SOLDERLITE**—Prefocused spotlight.
- **LONGER REACH**—Gets into tightest spots.
- **DUAL HEAT**—Single heat 200 watts; dual heat 200/250 watts; 120 volts, 60 cycles.

*Order your 250-watt Weller Soldering Gun from your distributor today, or write for bulletin direct.*

WELLER ELECTRIC CORP. 823 Packer Street, Easton, Pa.

**SOLDERING GUIDE.** Get your new pocket copy of "Soldering Tips"—revised, up-to-date, fully illustrated 20-page booklet of practical soldering suggestions. Price 10c at your distributor, or order direct.

BREVITY—Identify by IEN - 10432 if you write the maker

## Cut Your Downtime on mill roll changing to 1 Minute or Less with the NEW B&S SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

**"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."**

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

THE B & S #55 SHAFTLESS BACKSTAND features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.
Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N. Y.

BREVITY—Identify by IEN - 10434 if you write the maker

# MYSTIK Spra-Mask

*Gives you Hand-Lettered Results with Speed and Low Cost of Stenciling*

For fast, easy stenciling, get MYSTIK Self-Stik Spra-Mask. Die-cut to any design you wish, it sticks firmly to the surface to be painted, permitting one-man operation. There's no bleeding through the mask or under the edges to worry about. Just put it in place, cut the ties and spray. That's all you need to do for sharp, clear stencils. Available die-cut, in sheets, or in rolls of blank stock up to .36" x 60 yards inclusive. Write for information and free samples.
Mystik Adhesive Products,
2644 N. Kildare,
Chicago 39.

BREVITY—Identify by IEN - 10435 if you write the maker

# Is YOUR Neck Way Out, Too?

## ...with more business than you can produce?

Sounds like a happy situation when you say "too much business," but it sure isn't, as those of you know who are on that spot. And we're on it, too, since occasionally your requirements exceed our production. But . . . in an attempt to help you with your fastening problem, we've produced a TIME SAVER, shown below!

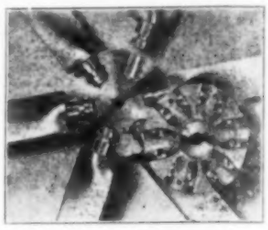
**FREE—A-N Stainless Fastening Selector**
This handy slide-chart instantly identifies A-N Nos. pertaining to stainless steel nuts, screws, bolts, rivets, cotter pins, washers; gives sizes and other data. Write for "Chart 51K" TODAY!

**Anti-Corrosive Metal Products Co., Inc.**
*Manufacturers of STAINLESS STEEL FASTENINGS*
CASTLETON-ON-HUDSON, NEW YORK

BREVITY—Identify by IEN - 10437 if you write the maker

## VENTILATING . . Adjustable propeller, 14 to 72 in., 1,000 to 100,000 cfm.

Source: HARVEY P. BERTRAM CO.
1007 W. 9th St., Cincinnati 3, Ohio



**Cast aluminum blades** have integral hubs machined to fit into recesses in the metal hub of this new impeller. The two hub plates clamp together to secure the individual blades in adjustable position. Each blade is balanced. Sizes range from 14 to 72 in. in diameter with 4 to 6 blades. Rating is 1,000 to 100,000 cfm. with operating speed at 1,150 rpm. for the smallest assembly and 870 rpm. for the largest. Drive is by a 1/20 to 25-hp. motor.

**Available assemblies** include motor-mounted propellers and housings, ducts and ventilators of various designs. Direct-connected units use an open or totally-enclosed ball-bearing motor. The belt connected units are equipped with open-type self-ventilated motors. Illustrated details are contained in 24-page catalog, "Industrial Air Fans."

BREVITY—Identify by IEN - 10438 if you write the maker

## PROTECTING . . Plastic goggle lens resistant to scratching, abrasion, acids

Source: WILLSON PRODUCTS INC.
111 Thorn St., Reading, Pa.

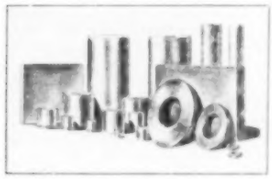
**Characterized by surface hardness**

**Plas-Tough** trade names a new six-curve plano plastic lens that weighs about one-half that of a comparable glass lens. It is resistant to pitting, scratching, abrasion. Shapes include the drop-oval Type P3 in 44 and 47-mm. sizes and a 50-mm. round unit, all for standard goggles.

BREVITY—Identify by IEN - 10439 if you write the maker

## BEARINGS . . Powdered bronze, oil impregnated, six types in stock

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.



**Some 160 sizes** have been added to the company's stock lines of Rost-Bronz porous powdered bronze oil-impregnated bearings. The line now includes plain bearings from 1/8 to 3 in. in inside diameter, flange bearings measuring 3/16 to 2 in. inside diameter, thrust bearings measuring 1/4 to 1 1/2 in. inside, cored bars measuring 1/2 to 5 in. inside by 1 to 7 in. outside, solid bars from 3/8 to 4 in., plate stock 1/8 to 1 in. in thickness. All are listed in the latest edition of the company's 388-page pocket catalog No. 55. A copy is available on request to the address above.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10440 if you write the maker

# KETT TOOLS Pay off...

**THE KETT POWER SAW ...A FIST-FULL OF CUTTING POWER**

In the tool kit of every contractor, builder, or maintenance man . . . in every metal-working shop, the Kett Power Saw is a time and labor-saving necessity. Light-weight but rugged and powerful, the Kett tool zips with amazing ease and speed through most any kind of sheet material . . . mild steel up to 10 gauge, aluminum to 3/16", plastics and other soft material up to 1/4" thick.

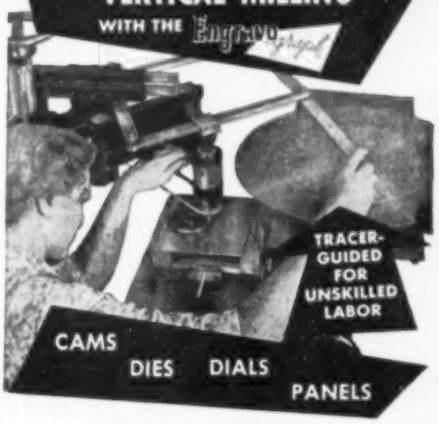
*Immediate Delivery. Write to Dept. A-10 for full details and descriptive literature*

**The KETT TOOL COMPANY**
5 EAST THIRD STREET CINCINNATI 2, OHIO

BREVITY—Identify by IEN - 10441 if you write the maker

# ENGRAVING • PROFILING VERTICAL MILLING

WITH THE Engravo




Write for literature describing:
1. Heavy Duty Engravograph (illustrated) Catalog H-21
2. Portable Engravograph — Catalog IM-23.

**NEW HERMES, Inc.** 13-19 University Place New York 3, N.Y.
CANADA: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

BREVITY—Identify by IEN - 10442 if you write the maker

# ELECTRIC TACHOMETERS

## Simplified RUGGED Design

### HAND MODEL

Small size and light weight — ideal for any shop and production test application. Precision made, sealed ball bearings, and the elimination of wearing parts assure constant accuracy. Models from 0-2,400 RPM to 500 FPM, 5,000, 15,000, and 25,000 RPM. $42.50 and up.

### PORTABLE MODEL

Measures any rotating speed with sustained accuracy for production and laboratory use. Three-range expanded scale: 0 to 1,000; 1,000 to 2,500; 2,500 to 5,000 and other models up to 20,000 RPM. Stability assured with no contacts, brushes or batteries to wear out. Accuracy 1/2, 1 or 2% of full scale. $71.00 and up.

### MOUNTED MODEL

Non-directional or indicating forward or reverse speeds in any required range up to 25,000 RPM. Available with SAE fittings and base mount. Calibrated to your exact needs. Completely enclosed and protected against moisture and dirt. $42.00 and up.

*Special models made for any specific requirements*

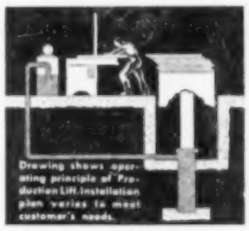
**ELECTRO-MECHANO CO.**
269 E. Erie St., Milwaukee, Wis.

BREVITY—Identify by IEN - 10443 if you write the maker

# Globe Production Lifts

***Speed machine-feeding jobs; reduce waste-motion, lessen fatigue***

There is a Globe Production Lift for almost any job from raising paper stock to a cutter to feeding sheet steel into a brake or shears... from feeding tumbling barrels to positioning men and equipment for welding operations.



Drawing shows operating principle of Production Lift installation plan varies to meet customer's needs.

Globe Production Lifts save time, waste-motion, and strain—the OiLIFT powered platform "inches" upward so that material is always on the right level for easiest and fastest handling. This all adds up to substantial savings in production costs.

***Got a Lifting Problem?***

**GLOBE**

***has the answer***

Muscle is the world's most wasteful lifting power. A Globe OiLIFT will do it cheaper and better.

For helpful information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc., write for bulletin IE-314.

**GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Philadelphia 18, Pa.**
*(Factories at Des Moines, Iowa & Philadelphia, Pa.)*

BREVITY—Identify by IEN - 10444 if you write the maker

## Dollar and Cents Angle

### on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

**FAFNIR BALL BEARINGS**

MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 10445 if you write the maker

# WASHERS

**FLAT AND LOCK WASHERS TO MEET ARMED FORCES SPECIFICATIONS**

Let Garrett fill your contract needs for all types of washers. We manufacture a complete line of high quality washers to meet the most exacting specifications of the Army, Navy and Air Force. Whether in regular steel, stainless steel, spring steel, brass, bronze, monel metal, aluminum, Alclad, copper or other metals specified we can supply them all. Our modern plating facilities offer you washers plated with zinc, cadmium, nickel, brass, chrome . . . or parkerized. Get what you want when you want them. Order washers from Garrett. Here are a few of the many product-proved washers in the line:

| | | | | |
|---|---|---|---|---|
| AN 935 | AN 961 | NAS 143 | BEC X 3.1 | BEB X 2 |
| AN 940 | AN 970 | NAS 143C | BEC X 4 | BEB X 3 |
| AN 945 | AN 975 | BEC X 1 | BEC X 1 | BEB X 8 |
| AN 960 | AN 8013 | BEC X 2 | BEB X 1 | BED X 1 |
| AN 965 | NAS 70 | BEC X 3 | BEB X 1.1 | SC 104-1 |
| AN 960 | | AN 122676 thru 122600 | | |

Write for new folder of specifications for Armed Forces Washers

GARRETT OF ELLWOOD CITY — GARRETT OF PHILADELPHIA

**GEORGE K. GARRETT COMPANY, INC. • PHILADELPHIA 34, PA.**

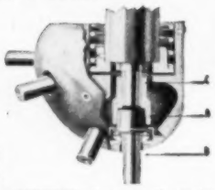
MANUFACTURERS OF STAMPINGS · LOCK WASHERS · FLAT WASHERS · SPRINGS · HOSE CLAMPS

BREVITY—Identify by IEN - 10446 if you write the maker

# MORE HOLES

## PER HOUR—PER DOLLAR

Increase production of any standard drilling machine by adding a Lign-o-matic, the only drill turret with the patented, self-centering principle that guarantees sustained accuracy equal to the drilling machine itself.



### FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

**PROVED PRODUCTION INCREASE** — Turret indexes faster than tools can be changed or work moved to another spindle. A single Lign-o-matic will release 5 drilling machines for other work and still show increased production and reduced costs on original job.

**VERSATILITY** — Fits any standard drilling machine without altering the machine. Handles operations such as drilling, reaming, counterboring, and tapping (on reversible spindle machines), up to ½" diameter in any material.

**PRECISION** — Patented, self-centering tapered drive (A) automatically locks turret spindle (B) into exact alignment with drilling machine spindle (C) for sustained accuracy.

**GUARANTEE** — May be returned in 10 days for any reason for full refund of purchase price. Two-year guarantee against defective parts.

**PRICE** — Model D, 6 spindles with No. 2 Jacobs male taper ..... $235.00
Chucks extra at established prices.

**DELIVERY** — Currently, 2 weeks.

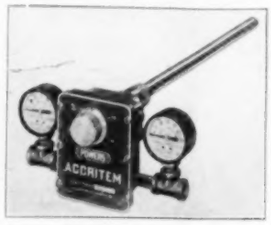
☐ Please rush ..... Lign-o-matic turrets for
(drill press make) ..... (size) .....
(quill dia.) ..... (spindle taper) .....
My name .....
Title .....
☐ Please send literature on Lign-o-matic turret.
(Attach coupon to company letterhead)

**HOWE & FANT, INC.**
524 FLAXHILL RD., SO. NORWALK, CONN.

BREVITY—Identify by IEN - 10447 if you write the maker

## CONTROL . . Temperature regulator actuates diaphragm valve or damper

Source: POWERS REGULATOR CO.
3537 Oakton St., Skokie, Ill.



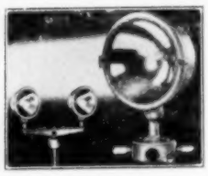

**Flow of air** or water from a 15-lb. supply to the operating diaphragm on a valve or damper is controlled by this new design of the company's Accritem temperature control. It was initially developed in 1894. Operation centers at a heat-sensitive tube for immersion installation in a water heater, heat exchanger, engine or compressor water jacket, or unit of processing equipment. Operating point can be set by turning a dial on the face of the housing.

**Two ranges** are from 50 to 250 deg. F. and from 150 to 350 deg. F. The temperature-sensitive tube is made of copper and is silver soldered in place to enclose an Invar rod bearing on the operating mechanism. Pressure gages on the two sides complete the assembly. The tube is 12 in. in length. Mounting point fits into a ½-in. pipe-threaded opening. Overall dimensions of the housing are 2⅞ by 3⅝ inches. Direct or reverse action can be specified, the former increasing control-line pressure on rise in temperature.

BREVITY—Identify by IEN - 10448 if you write the maker

## LIGHTING . . Adjustable spotlight for use on boundaries, sidings, platforms

Source: STONCO ELECTRIC PRODUCTS CO.
487-91 Henry St., Elizabeth 4, N. J.



**No. 56** is a new 300-watt reflector-equipped spotlight that mounts adjustably to concentrate its light in a long-throw oval-shaped narrow beam for area protection lighting of vulnerable spots such as gates, sidings, switch and loading areas, yards, platforms.

**Cast aluminum** is employed in the housing and the universally adjustable swivel arm. The arm is threaded for ½-in. pipe connection to fit a range of interchangeable accessories such as flat base, weather-proof junction box, wall bracket, wire trough. A single-cluster assembly is available to take a maximum of 5 units. Wiring is enclosed. Each assembly is Underwriters' approved.

BREVITY—Identify by IEN - 10449 if you write the maker

## SALT . . How it is produced described in new 36-page booklet

International Salt Co.
P. O. Drawer 511-A, Scranton 2, Pa.

**Evaporated** and rock salt production methods from well or mine to finished product are described by text and pictures in new booklet, "Salt." Example is a diagram which shows a sectional view through a salt well and a salt mine. Equipment employed is shown along with details on the processes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10450 if you write the maker

BREVITY—Identify by IEN - 10451 if you write the maker

## SAFETY IS THE BEST POLICY IN LOAD BINDERS

**THE CANTON "TAKE-UP" ACTION** picks up slack, binds in one operation. Design and heavy duty construction eliminates spread or release while in operation. Each factory tested, guaranteed for specified capacities. 7 sizes from 4,000 to 35,000 lb. rating, priced $3.00 to $14.80. Continuous action makes them a versatile tool in steel, lumber, machinery hauling, logging, oil fields, rigging. Two sizes made without take-up feature.

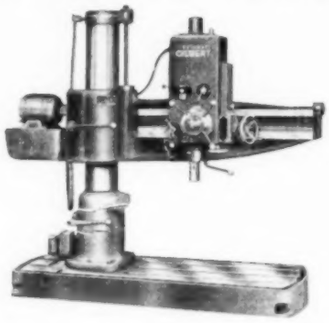
**POPULAR AMERICAN FORGE RATCHET LOAD BINDERS**

COMPLETE SAFETY IN TIGHTENING, BINDING, RELEASING LOADS . . . versatile "turnbuckle" principle has wide range of application. One man easily operates without aid of extension pipe; no kick-backs, full 8" take-up. 3 sizes, $14.90 to $18.10. Special size ideal for trueing steel work on building construction.

**CANTON CAST PRODUCTS CO.**
*Maker of Cancap Exhaust Protectors*
2404 13th St., N. E. • Canton 5, Ohio

BREVITY—Identify by IEN - 10452 if you write the maker

# good head for fast work



This head lets you see what you're doing; keeps controls at the comfort level; responds quickly with minimum effort. Correct gear ratio makes manual head traversing easy, lets you spot the head right on the "O." Gilbert "heft" in the right places minimizes deflection, holds accuracy even when drilling large work at outside limits of head and arm travel. Write for new Bulletin No. 549. *Those who buy Gilbert buy Gilbert again.*

THE CINCINNATI **GILBERT** MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

BREVITY—Identify by IEN - 10453 if you write the maker

## TAKES MUCH LESS ROOM...

**for this midget vacuum pump!**

14⅜" x 10¾" x 13⅛" — that's all the room you need for the new Kinney Model CVM 3153. In spite of its small size, this midget vacuum pump with its ¼ H.P. motor has a free air displacement of 2 cu. ft. per min. and produces low absolute pressures of 0.1 micron or better. For laboratory or production work — for backing diffusion pumps — for on-the-spot repair, service, or test work, you can't beat Model CVM 3153. Write for catalog. KINNEY MANUFACTURING COMPANY, 3564 Washington St., Boston 30, Mass. Representatives in New York, Chicago, Cleveland, Philadelphia, Los Angeles, Houston, New Orleans, San Francisco, Seattle, and foreign countries.

Kinney VACUUM PUMPS

BREVITY—Identify by IEN - 10454 if you write the maker


For HIGHEST ELECTRICAL & MECHANICAL Efficiency!

New JONES 2400 SERIES PLUGS & SOCKETS

Improved Socket Contacts. Four individual flexing surfaces. Positive contact over practically their entire length.

Both Plug and Socket Contacts mounted in recessed pockets greatly increasing leakage distance, INCREASING VOLTAGE RATING.

Plug and Socket Contacts cadmium plated. Add to appearance of your equipment. Interchangeable with Jones 400 Series.

Ask for Catalog 18. Complete line Jones Plugs, Sockets, Terminal Strips.

P-2406-CCT Plug — with cable clamp in top.

S-2406-SB Socket with shallow bracket for flush mounting.

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION CINCH MANUFACTURING CORPORATION CHICAGO 24, ILLINOIS SUBSIDIARY OF UNITED-CARR FASTENER CORP.


BREVITY—Identify by IEN - 10455 if you write the maker

# Twice the belt life in backstand grinding!

Try one simple change in your present backstand set-up. Using the same backstand grinder, the same type of abrasive belt by CARBORUNDUM, remove the contact wheel and replace it with our new serrated rubber "61" wheel.

Put the machine back to work. See for yourself how stock removal rates go up, how much longer the belt cuts, how belt changes are reduced. Watch for a better finish, less fatigue from your operator. Best of all, check your abrasive costs. They may be as much as 50 per cent less. See your CARBORUNDUM representative or distributor about the new "61" wheel. Or write Dept. IEN 80-36 for details.

Only CARBORUNDUM TRADE MARK makes ALL abrasive products ...to give you the proper ONE

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York.


BREVITY—Identify by IEN - 10457 if you write the maker

## PACKAGING . . Sheeting machine cuts barrier wrapping sheets from roll

Source: MILLER WRAPPING & SEALING MACHINE CO. 16-20 S. Clinton St., Dept. I, Chicago 6, Ill.

**Barrier sheets** for Government Specification wrapping, particularly in Grade-C Type-I, are slit and then cut from a roll of the material in continuous operation of this new Model-BL machine. A supply roll to 36 in. in width is mounted at the rear and is fed in intermittent forward movement, adjustable in length, for the slitting operation. Length can be set at 3 to 26 inches. Slitting is by a set of cutters to produce a maximum of six strips from the 36 in. width.

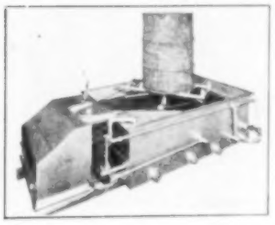
**On the conclusion** of each forward movement a cut-off knife is operated while the strips are not being fed. The severed sheets drop into trays at the front or onto a conveyor that can be supplied to specification. When the machine is set to cut six strips the top speed is 216 sheets per minute.

**The rotary slitters** can be moved to the end of their shaft when they are not being used. They are positioned for slitting after loosening a set screw and sliding them along the shaft. A new roll of barrier wrapping sheet can be placed in about two minutes. The machine measures 5 ft. in length, 4½ ft. in width, 4 ft. in height. A 65-in. conveyor increases the length to about 9 feet. Operation is started and stopped by a hand or foot-trip lever.

BREVITY—Identify by IEN - 10458 if you write the maker

## CLEANING . . Drum washing machine mounts the work to revolve over a nozzle

Source: L. M. GILBERT CO. 430 Chestnut St., Philadelphia 6, Pa.



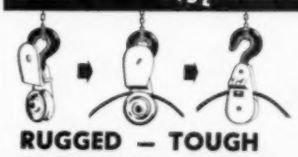
**Revolving frame** with a jet nozzle located at the center provides support for a 5 to 55-gal. steel drum to be cleaned internally. The frame is rotated by belt connection to a 5-hp. motor which also drives a high-pressure pump. The pump draws hot water or cleaning solution from the 200-gal. tank comprising the body of the machine and delivers it to the drum interior as the frame is slowly revolved. Drainage from the drum passes over a screen to return to the tank for recirculation.

**Connections** are provided to direct steam into the tank for quick start. The steam also can be directed into the drum through the cleaning nozzle. In the tank are water and steam-supply manifolds and a heating coil. Tank dimensions are 42 by 60 by 20 inches. In normal operation the machine will clean one drum per minute.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10459 if you write the maker


WECO DROP-SIDE SNATCH BLOCKS



RUGGED — TOUGH EASY TO HANDLE

Forged steel hook and sheave . . . induction hardened extra heavy sheave pin . . . 3/8" steel plate sides . . . self-lubricated "Super Oilite" bearing give WECO SNATCH BLOCKS strength for heavy hoisting, and durability for long life.

The patented "Drop Side" makes it easy to string and unstring the block. Instead of the usual "needle threading" procedure just remove the wing nut, raise side, insert line, drop the side, and replace the nut.

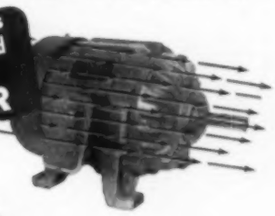
Specify WECO SNATCH BLOCKS for greatest service and longest life. Write for bulletin.

WELL EQUIPMENT MFG. CORP. Subsidiary of Chrisman Company HOUSTON 1, TEXAS Exclusive Sales Representative Outside Mid-Continent Area CHRISMAN COMPANY Bros Calif New York 7 Export Sales: CHRISMAN EXPORT COMPANY Bros Calif New York 7

WECO Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment


BREVITY—Identify by IEN - 10460 if you write the maker


ALLIS-CHALMERS Totally-Enclosed Fan-Cooled MOTOR



# Get the Motor that Cleans Itself

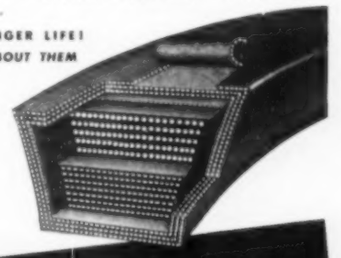
MOTOR CLEANING operations are reduced . . . maintenance costs are lower than ever before with the new Allis-Chalmers tefc motor. Here's why! Concealed air passages have been eliminated; dirt cannot build up to cause overheating. Cooling air is blown over the ribbed cast iron frame and bearing housings — carrying dirt away with it. Oily dirt that sticks can be wiped or blown off.

This new motor built in all NEMA standard frame sizes from 224 to 505. Also in explosion-proof type. Get Bulletin 51B6144 from your A-C Authorized Distributor or District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3463

ALLIS-CHALMERS


BREVITY—Identify by IEN - 10461 if you write the maker


FOR LONGER LIFE! —ASK ABOUT THEM



DODGE SEALED-LIFE V-BELTS

● The life is sealed in! Special cover protects tension members — insures *longer belt life*. Dodge Sealed-Life V-Belts are factory matched to TAPER-LOCK Sheaves for best performance. Stocked by Dodge Distributors. Write us for complete details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

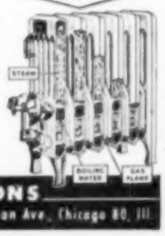

BREVITY—Identify by IEN - 10462 if you write the maker


KEEP SCATTERED OFFICES WARM THIS WINTER . . .

Steam Heat... ...Where You Want It...When You Want It!

No hot water pipes, boiler or furnace room is necessary when you heat isolated offices with Clow Gasteam Radiators... no need to waste heat in the main part of your plant just to keep these remote areas warm. Each unit is an independent heating plant which makes its own steam heat with gas.

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES.

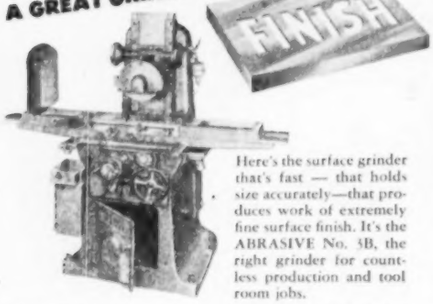


Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS 201-299 N. Talman Ave., Chicago 80, Ill.

BREVITY—Identify by IEN - 10463 if you write the maker


A GREAT GRINDER FOR FINISH



Here's the surface grinder that's fast — that holds size accurately—that produces work of extremely fine surface finish. It's the ABRASIVE No. 3B, the right grinder for countless production and tool room jobs.

- extra-rugged one-piece bed and upright
- easy vertical adjustment of head with graduated (.0001") handwheel
- built-in wear adjustments
- automatic (power) longitudinal and cross feeds
- box-type saddle
- hydraulic table shock absorbers
- big capacity: 24" long x 8" wide x 12" high
- 3 H.P. motor (5 or 7½ H.P. for special work)
- super-precision, cartridge-type spindle
- one-shot lubrication system

It will pay you to get detailed facts and figures about Abrasive No. 3B. Send for catalog. ABRASIVE MACHINE TOOL CO., 18 Dunellen Road, East Providence 14, Rhode Island. Distributors throughout the world.

ABRASIVE ACCURACY MORE PRODUCTION

Abrasive Quality Is Reflected In the Finish of Your Product


BREVITY—Identify by IEN - 10464 if you write the maker


Mathews Belt Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

ROLLER CONVEYERS • CHAIN CONVEYERS • LIVE ROLLER CONVEYERS
WHEEL CONVEYERS • ELEVATING CONVEYERS • PORTABLE CONVEYERS
ROLLER SPIRAL CONVEYERS • TROLLEY CONVEYERS
SPECIAL CONVEYING MACHINERY

MATHEWS CONVEYERS

GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities


BREVITY—Identify by IEN - 10465 if you write the maker

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" − 0.0000" insure dependable sizing and location of holes and slots for machinists, set-up men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

Quantity
Letter sets @ $45 — 32 gages (A-Z)
Fraction Sets @ $50 — 60 gages (1/64" to 1½" in 1/64" steps)
Number Sets @ $90 — 120 gages (1 to 60)
Single gages @ $1.
Stand alone @ $10

Please Rush checked items and literature to
company
address
name
title


BREVITY—Identify by IEN - 10466 if you write the maker

## SIGNALING . . Thermostat to actuate fire warning circuit

Source: FENWAL INC.
31 Pleasant St., Ashland, Mass.

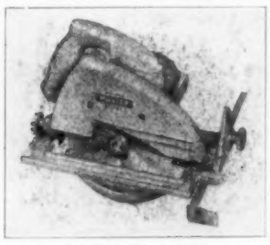
**New assembly** of the company's fire-detecting thermostat, previously described IEN-6780-48, installs in a ceiling and is suited for protection of an unobstructed area as large as 625 sq. ft. per unit. Operation is characterized as "Rate Compensation" in which the thermostat element anticipates a predetermined temperature in step with the rate of temperature change so it will operate the signal circuit at the exact temperature point at which it has been set.

**Adjustable contacts** are assembled in a cylindrical heat-sensitive stainless-steel housing which expands and contracts with change in temperature. Sealed construction permits application in ordinary or explosive atmospheres. Operating point can be specified to 325 deg. F. The unit is characterized by sensitivity combined with ability to duplicate action on a given temperature setting and resistance to false operation due to vibration. Detect-A-Fire is the trade name.

BREVITY—Identify by IEN - 10467 if you write the maker

## WOOD WORKING . . Portable saw, motor drives 6¼ in. circular blade

Source: MASTER-TAPER CO.
4529-33 N. Beacon St., Chicago 40, Ill.



**List price** is about $47 for this new Ramsaw portable electric saw. It can be set to cut through 2-in. stock on a 45-deg. angle. Drive is by a ¾-hp. universal motor for operation on 110 volts at a free speed of 4,200 rpm.

**Assembly** is in an aluminum housing. The blade guard includes a plastic window so the operator can see the cut line. An adjustable rip fence extends to 8 inches. The trigger switch in the handle opens the motor circuit when the operator's finger is removed. Bevel and depth adjustments are integral.

BREVITY—Identify by IEN - 10468 if you write the maker

## TUBES . . Technical article reprint on mechanical steel tubing cold formed by compression

Tube Reducing Corp.
50 Main Ave., Wallington, N. J.

**Bulletin R-5** is an 8-page reprint of an article from the technical literature by L. A. Karg, Company's Sales Manager. Title is "Making High-Strength Seamless Tubing to Close Tolerances." It describes the company's Rockrite process of cold reduction, illustrates the steps involved, shows examples of shapes produced including tapered tubes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10469 if you write the maker

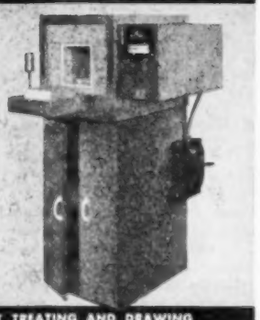

INDUSTRIAL FURNACE

BLUE M LINE

AUTOMATICALLY CONTROLLED TEMPERATURE TO 2000° F

DESIGNED TO WITHSTAND MAXIMUM ABUSE

ELECTRONIC CONTROL WITH BUILT-IN THERMOCOUPLE-BREAK PROTECTION



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FEATURES:
AUTOMATIC MODELLA QUICK-HEAT
*High wattage* run-up for rapid rise in temperature.
AUTOMATIC MODELLA POWER SAVER
*Low wattage* operation for closer temperature control . . . saves current . . . avoids troublesome overshooting.

Model M-84 illustrated
I.D.—8"W x 8"H x 14"D
Voltages—220 or 440 volts
Sizes from 6" x 6" x 10" I.D. and larger (bench or floor models)
Wired complete ready for service

* CONTACT YOUR LOCAL DEALER or

BLUE M ELECTRIC CO.
306-8 W. 69th ST. CHICAGO 21, ILL.


BREVITY—Identify by IEN - 10470 if you write the maker


It's as easy as this to

ISOLATE VIBRATION and SAVE MONEY with ISOMODE* Pads

Here's the durable mounting to absorb shock...reduce noise ...cut your maintenance costs. In hundreds of installations, the Isomode Pad has proved to be not only one of the most economical mounts, but also one which does a superior job of isolating vibration.

By absorbing forces normally transmitted to floor, Isomode Pads reduce building damage and undue deterioration of machinery. No bolting in most cases.

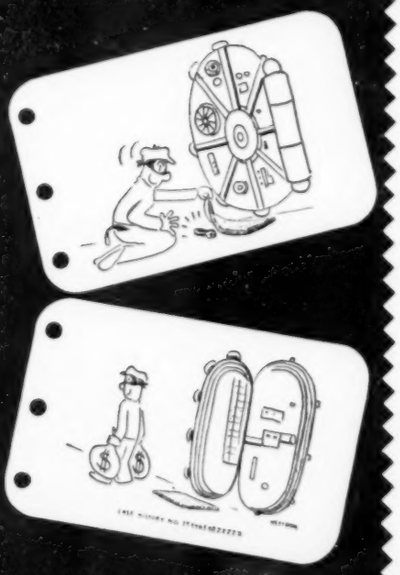
Made of oil, age- and water-resistant Du Pont Neoprene. Write for details—discover their surprisingly low cost.

*Trade Mark Reg. U.S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.


BREVITY—Identify by IEN - 10471 if you write the maker


INGENUITY can solve any problem



if YOUR PROBLEM involves the higher production of threaded parts

HY-PRO TAPS can help you to a solution

HY-PRO TOOL CO.
NEW BEDFORD, MASS. U.S.A.
Subsidiary of Continental Screw Co.

Order from your distributor or call the HY-PRO SALES ENGINEER

▼ BREVITY—Identify by IEN - 10473 if you write the maker ▼

Now!

AT YOUR FINGERTIPS!

A Means Of Pre-determining The *Right* Corrugated For Every Job

THE

**ChippaKit**

• • • The handiest reference file of corrugated materials you ever saw!
• more compact than many reference books—only 8½" x 3¾" x 5½".
• carries complete line of samples of Chippaflex Flexible Corrugated and Chippewa Single-Faced Corrugated—the widest variety available anywhere.
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• always up-to-date—new samples sent as available.
• completely reliable—actual shipments do not deviate from ChippaKit sample standards. Once you specify—you **know**. The grade never changes.
• a fabulous time-saver—saves effort and money, too.

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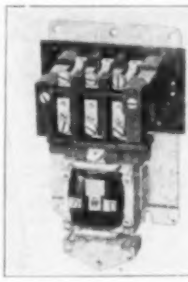
PAPER PRODUCTS CO., INC.

2425 S. Rockwell Street Chicago 8, Illinois


▼ BREVITY—Identify by IEN - 10476 if you write the maker ▼

## MOTOR CONTROL . . Magnetic contactor, 3 and 5 poles, double break contacts

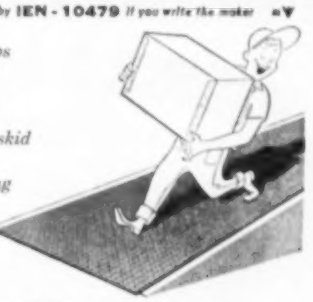
Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.



**Bulletin 4458** Size O is a new solenoid operated contractor that can be set up with normally-open or normally-closed silver-contacts. Rating is to 2 hp. on 550-volt 3-phase 60-cycle ac. Standard coils are available for 110 to 550-volt operation on 25, 50 or 60 cycles. The contactor can be used for main line reversing and accelerating service on controllers for single or multi-speed polyphase induction motors, single-phase motors or slip-ring motors. It also can be employed to pilot control components such as solenoids, clutches, large contactors, electromagnetic brakes. It is suited for a variety of lighting and heating applications where remote or automatic switching is required.

**The solenoid plunger** and movable-contact assembly are the only moving parts. They operate vertically in plunger guides. A return spring is coupled to the plunger to assure full contact pressure and lead on normally-closed contacts. It also provides quick positive braking on normally-open contacts after the operating coil is de-energized. Overall dimensions are 6⅝ in. in height, 3⅛ in. front to back. The 3-pole assembly is 4¼ in. in width. The 5-pole assembly measures 4⅝ inches. Eight-hour rating is 15-amp. open, 13.5 amp. enclosed.

▼ BREVITY—Identify by IEN - 10479 if you write the maker ▼

*"On steps and ramps around the shop*
*Where slips could spell disaster,*
*Safe, lasting, non-skid Multigrip*
*Keeps traffic moving faster!"*

UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL EXPORT COMPANY, NEW YORK
UNITED STATES STEEL SUPPLY COMPANY,
Warehouse Distributors, Coast-to-Coast

**U·S·S MULTIGRIP FLOOR PLATE** 1-1144

UNITED STATES STEEL


▼ BREVITY—Identify by IEN - 10474 if you write the maker ▼


**THREE SAFE, SURE CONTROLS for HAZARDOUS LOCATIONS**

*Enclosed in Approved Blast-Proof, Dust-Tight Housings*

**TYPE EJO THERMOSTAT** A precisely adjustable control. Narrow calibrated ranges for liquids or gases. Adjustable ranges, 120 F or 250 F between limits of −120F and 600F. Ratings AC 1200 watts 125-250 V AC. Uses any United remote bulb assembly.

**TYPE EJR VACUUM SWITCH** For close differential control on exposed applications. Ranges from 0-180 psi pressure, 30" Hg vac to 20 lb. press. Diff. 4" WC to 2 lb. adjustable or fixed at customer's option.

**TYPE EGL PRESSURE CONTROL** A rugged pilot switch for industrial uses involving the control of air, gas and liquids. Ranges from 0-350 psi. Diff. from 2-15 psi, electrical ratings AC 1200 watts 125-25 V AC.

All controls tapped for standard pipe fitting. All may be mounted in any position.

*Write for complete details today*

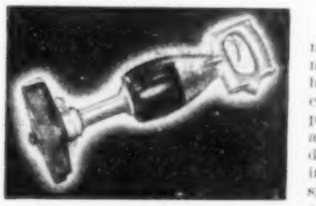
UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES


▼ BREVITY—Identify by IEN - 10477 if you write the maker ▼

## GRINDING . . Portable pneumatic tool has coupling to prevent overspeeding

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.



**The arbor** in this new portable tool is mounted in sealed ball bearings. It is coupled to the rotary pneumatic motor in an arrangement that disconnects the drive in the event of over speeding due to governor wear, abuse, wrong adjustment or dirty air. The driving member in the coupling is a spring-retained pawl that engages a slot in the arbor. Increased speed beyond a certain point causes the pawl to move outward by centrifugal force against the spring action so the drive is disconnected.

**Three speeds** are 3,100, 4,100 and 4,500 rpm., as specified, to take an 8-in., 6-in., or 5-in. wheel. Overall length is 24⅝ in. with a straight handle, 22½ in. with a grip handle. Maximum side-to-center distance is 2⅜ inch. Weight is about 16½ lb. with a guard.

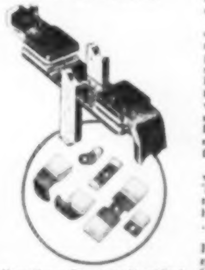
**Construction** includes a handle providing sufficient space between the back of the throttle lever and the grip so the tool can be carried safely with the air connected, a new type rubber-faced throttle valve that is not affected by oil or moisture and seats without need for lapping, permanently lubricated bearings, provision to direct the exhaust in any of four directions so it need not strike operator or work.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

▼ BREVITY—Identify by IEN - 10480 if you write the maker ▼


**PROBLEM: How to Get Higher Performance and Longer Wearing Qualities in Contact Assemblies**

**GENERAL PLATE: Meets the Specified Requirements with TOP-LAY, A Composite Metal Combination**



Have You a Composite Metal Problem? General Plate can solve it for you.

Manufacturers of electric motor starters had frequent trouble with contact assemblies which were made by brazing the contact to the base metal carrier. This method results in annealed contacts and carriers which in turn means lack of strength, poor wearing qualities and short contact life.

General Plate's Top-Lay contacts and contact material meet the engineering specifications by providing the higher performance necessary. Made by cladding silver or precious metal strip to suitable base metal, Top-Lay is cold worked by profile rolling which gives it a hard, long-wearing surface. In addition, Top-Lay saves on fabrication costs as it is easily blanked and formed to the required shape. (For information on Top-Lay write for Technical Data Bulletin #714.)

No matter what your metal problem, it will pay you to consult General Plate. Their vast experience in cladding precious to base metals, or base to base metal combinations can overcome your problems . . . often reduce costs as well.

General Plate Products include . . . Precious metals clad to base metals, Base metals clad to base metals, Silver Solders, Composite contacts, buttons and rivets, Platinum fabrication and refining, Age-hardenable #720 Manganese Alloy.

**GENERAL PLATE** Division of Metals & Controls Corporation
710 FOREST STREET, ATTLEBORO, MASS.


▼ BREVITY—Identify by IEN - 10475 if you write the maker ▼


**MET-L-WOOD**
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

*To Name a Few:*

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

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Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

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"Met-L-Wood . . . opening new horizons to structural designers"


▼ BREVITY—Identify by IEN - 10478 if you write the maker ▼


**New Miracle Material SILICONE RUBBER**

**ARCOSIL* SILICONE RUBBER PRODUCTS**
"O" Rings
Molded
Extruded
Die-cut
Tubing
Ducting
Couplings
Fiberglass Reinforced

Whether the problem is new product design or the improvement of present design, consider silicone, the amazing new rubber that performs to best advantage where ordinary rubbers fail.

For the answer to any silicone rubber problem, call Arrowhead—specialists in the development and manufacture of silicone rubber products of all kinds.

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**WRITE FOR ENGINEERING BULLETIN**
Gives latest complete data on characteristics and applications of various silicone rubber compounds.

ARROWHEAD RUBBER COMPANY
DOWNEY (Los Angeles County) CALIF.
A DIVISION OF NATIONAL MOTOR BEARING CO., INC.


▼ BREVITY—Identify by IEN - 10481 if you write the maker ▼


**Diaform** Gives you toolroom precision in this fast new method for form-truing the contours of grinding wheels up to 10" dia. x 1" width to .0005" accuracy in a matter of minutes. Just set it up on your toolroom surface grinder.

INEXPENSIVE
LIGHTWEIGHT
PORTABLE
ACCURATE

WRITE FOR ADDITIONAL INFORMATION

**PRATT & WHITNEY**
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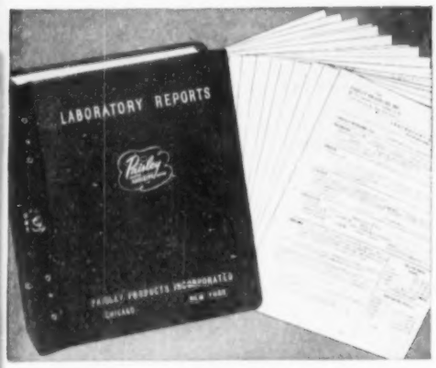
WEST HARTFORD 1, CONNECTICUT, U.S.A.
Dedicated to Accuracy for 90 years

BREVITY—Identify by IEN - 10482 if you write the maker

BREVITY—Identify by IEN - 10483 if you write the maker

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Gentlemen: Send us the Laboratory Reports and Data Sheet indicated below.

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(You fill in and return for laboratory recommendation.)

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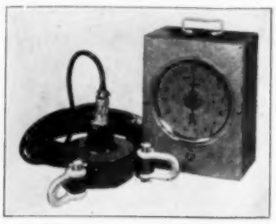
BREVITY—Identify by IEN - 10485 if you write the maker

## GAGE . . Reads tension, weight, tractive load from a remote point

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.



**Twelve ranges,** all starting at 0 with maximum at 500 to 50,000 lb., replace the six ranges maximum at 5,000 lb., previously described IEN-11384-47, in the company's combination of measuring transmitter and electric receiver. The transmitter applies at the point of loading to read tension, weight, tractive load. Displacement in the transmitter rotates a ball-bearing selsyn motor. This motor connects electrically with an external 12-volt battery circuit to operate a "repeater" motor in the remote indicator which can be located as far as 400 ft. from the thansmitter. Accuracy is guaranteed to within 2 per cent plus or minus of full-scale reading.

**The transmitter** weighs 9 lb. and can be specified for operation in tension or compression. The receiver, with its 6½-in. indicating dial, weighs 12 lb. and measures 9 by 5 by about 12 inches. The connecting cable is a 5-conductor rubber-covered unit with aircraft type quick-connect and disconnect fittings. Two receivers can be employed with one transmitter for readings at two remote points.

BREVITY—Identify by IEN - 10486 if you write the maker

## SWITCH . . Sensitive snap acting, for dc. circuit, 10 amp. on 110 volts

Source: MU-SWITCH DIVISION
380 Pequit St., Canton, Mass.

**Model TB-5000** is a new single-pole double-throw switch employing an Alnico magnet to extinguish any arc as soon as the contacts open. The arrangement makes the switch suitable or use in dc. circuits particularly. The base and cover are molded arc-resistant Melamine. A metal enclosure can be specified. Overall dimensions are about 2 by 1¼ in. in width and height. No. 8 screw terminals are provided. The switch is interchangeable with the company's standard design for ac. operation primarily.

BREVITY—Identify by IEN - 10487 if you write the maker

## STEELS . . Booklet describes alternate for chromium-nickel stainless steel along with properties

Republic Steel Corp.
3102 E. 45th St., Cleveland 27, Ohio

**Type-430** stainless steel is offered in new 12-page booklet as an alternate to the 18-8 series now restricted because of nickel content. The booklet is titled, "A Guide to Type 430 Stainless Steels . . ." It describes properties, fabrication and general applications. It includes a 4-page tabulation of corrosion data from Acetic Acid to Zinc Sulphate.

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BREVITY—Identify by IEN - 10488 if you write the maker

**BARCO** *High Pressure* **SWIVEL JOINTS**

WHEREVER hydraulic piping or tubing must move, use Barco Swivel Joints! Barco's exclusive design provides *side flexibility* to allow for piping misalignment and to PREVENT BINDING. *Only Barco offers this important advantage.* Widely used for making compact, low torque swivel connections to reciprocating or rotating parts. Ends the nuisance of sagging, flopping non-rigid lines. LEAKPROOF; SAFE! Suitable for extremely high or low temperatures. Ratings to 3,000 psi, or higher. Choice of styles, ¼" to 2", angle or straight. *Ask for Bulletin 265.* BARCO MFG. CO., 1838L Winnemac Ave., Chicago 40, Ill. *In Canada:* The Holden Co., Ltd.

BREVITY—Identify by IEN - 10489 if you write the maker

**TUNGSTEN-CARBIDE TOOLS AND DIES**
UP TO
**10 times longer life**
With
**HYPREZ DIAMOND COMPOUNDS**
*How?* WRITE FOR DETAILS TO DEPT. E

**HYPREZ DIVISION**
ENGIS EQUIPMENT CO.
431 S. DEARBORN ST. CHICAGO 5, ILL.

BREVITY—Identify by IEN - 10490 if you write the maker

***PRE-MEASURED*** . . . factory marked in red at ten-foot intervals enables stockman to give out the exact length, keep accurate record with no fumbling—no delaying. Convenient—economical—sure—it's a feature that can't be beat.

***CARTONIZED*** . . . Easy to handle, no bands to cut, no covers to remove. Just open, pull out the rope and cut. Coils stay clean, don't collapse . . . cartons can be stacked ceiling high. Just another feature your stockman will like . . . another feature that means *real* economy.

***NEW BEDFORD ROPE*** . . . tops in quality, available at **no extra cost** in pre-measured Manila or Sisal. Packed in easy-to-dispense cartons . . . half or full coils.

Send for FREE reference chart on specifications for New Bedford Manila, Sisal and Nylon Rope.

**NEW BEDFORD CORDAGE CO.**
New Bedford, Mass.

BREVITY—Identify by IEN - 10491 if you write the maker

**Then Find Out About Our Specialty—VOLUME PRODUCTION OF . . .**

Rubber Convoluted Boots, Accordion-type Seals, Boots and Sleeves for Machinery, Bellows, Tubing, Covers, Sacs, Grommets, Caps and Bulbs!

***Write Today*** **for FREE Brochure**

which will show you how others have solved design and production problems with Dipped Rubber Parts—Complete with Pictures and Prints!

**Midwest Rubber COMPANY**
17227 Conant Road, Detroit 12, Michigan

BREVITY—Identify by IEN - 10492 if you write the maker

# UPTEGRAFF

# Dry Type Transformers

## for Indoor or Outdoor Service

You can reduce your power costs by installing Uptegraff Dry Type Transformers near your "load centers." Made with either Class A or Class B insulation as required, and built in standard or special designs, Uptegraff Dry Type Transformers are efficient and dependable.

*Write for illustrated bulletin.*

**R. E. UPTEGRAFF MANUFACTURING CO.**
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA
Makers of Power · Distribution · Instrument · Specialty Transformers

BREVITY—Identify by IEN - 10493 if you write the maker

# "SKIL Drills and Drivers

**GIVE US THE FASTEST PRODUCTION WITH THE LOWEST MAINTENANCE COSTS,"**

**says N. Y. Stark, President**
**Namor Products Company, Cleveland, Ohio**

SKIL Drills and SKIL Drivers have been at work constantly for more than 2½ years all along the production line of the Namor Products Company, manufacturers of dinette furniture. These hard-working SKIL tools have required little maintenance and the cost of that maintenance has been remarkably low. That's why Mr. Stark says, "We enthusiastically endorse SKIL Tools!"

**3 at a time . . . 4 at a time.** SKIL Drills—Model 241 used singly or in multiples of 3 or 4 in SKIL Bench Stands bore more than 600 holes every day through wood and Formica for insertion of dowel pins.

**SKIL Drill—Model 241. One of 26 SKIL Models.** ¼" special duty drill. Capacity: 0" to ¼" in steel, 0" to ½" in hardwood. Speed: 2250 r.p.m. no-load. Overall length: 11¼". Weight: 4⅝ pounds.

**SKIL Bench Stands** quickly convert any SKIL Drill into a stationary drill press.

**SKIL Drivers** are on the job, too—12 of them are used to attach hardware and speed assembly.

**SKIL Driver—Model 303. One of 20 SKIL Models.** Capacity: ¼" diameter machine screws, nuts; No. 12 self-tapping screws. Speed: 750 r.p.m. no-load, standard; speeds of 1000 and 1250 r.p.m. at no extra cost. Overall length: 11⅛". Weight: 3⅝ pounds.

**Model 489**—Similar to Model 303 but with reversing switch.

***See your SKIL Distributor for demonstrations and complete information.***

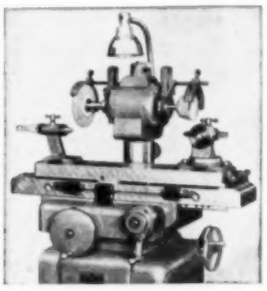
**SKIL PORTABLE TOOLS**

SKIL Products are made only by SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Ill.
SKILSAW Factory Branches in Principal Cities
In Canada: Skiltools, Ltd., 3601 Dundas Street West, Toronto 9, Ont.

BREVITY—Identify by IEN - 10495 if you write the maker

## GRINDING . . Universal machine for tools, cutters, ½ hp. motor

**Source: K. O. LEE CO.**
**First at Congress, Aberdeen, South Dakota**



**Series B-800** is a new set of grinding machines representing further development over the universal machine previously described IEN-3798-43. Model B-800 is the basic machine. Model B-860 is universal design with a slide mounted multiple-speed head. The Model B-803 is a machine for chip-breaker grinding and Model B-804 is a universal carbide-tool grinder. Model B-800 is illustrated.

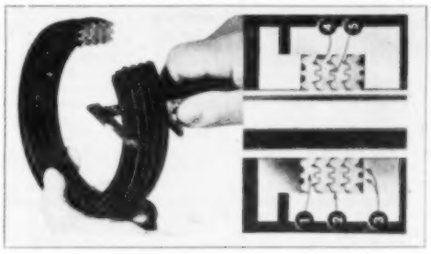
**Swing** over the table is 8¼ inches. Distance between centers of head and tailstocks on the first two machines is 18¾ inches. Work surface on the table measures 5¼ by 25¼ inches. The table can be set over for taper grinding to 15 deg. on either side of center. Traverse is 11¾ in. with a fast or slow feed as selected for operation at the hand crank. Cross feed is through 6¾ inches.

**The wheel head** is equipped with a universal motor and mounts wheels at both sides. It is assembled on a 4-in. center column and can be rotated or swiveled through 360 degrees. It takes wheels to 6 in. in diameter.

BREVITY—Identify by IEN - 10496 if you write the maker

## SEALING . . Molded ring packing, interlocking design, ⅝ in. and larger

**Source: JOHNS-MANVILLE SALES CORP.**
**22 E. 40th St., Room 1201, New York 16, N. Y.**



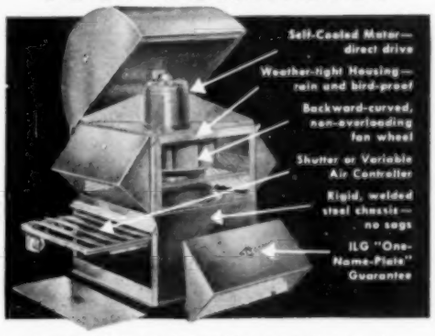
**Uneepac** trade names a new molded packing available in various compositions for service with air, gas, oil, steam, water under pressure and vacuum. The packing is made in sets of endless or split rings for shafts ⅝ in. and larger.

**The lips** 1 are positioned diametrically and vertically by the center section of the sealing ring. Spaces 2 between the lips and heels permit fluid pressure to act upon each lip. Lips 3 are protected by the projecting portion of the center section against damage by excessive gland pressure. Lips 4 are supported to prevent collapse or distortion by excessive fluid pressure. Each ring 5 correctly centers itself on the preceeding ring for axial alignment.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10497 if you write the maker

# New ILG power roof ventilator




New "PRV" type for positive, controlled ventilation, regardless of wind or weather conditions, through vertical flues or duct systems. Get data—send inquiry card or phone nearby Branch Office. Ilg Electric Ventilating Co., 2812 N. Crawford Ave., Chicago 41, Illinois.

**ILG** *FREE! Bulletin No. 1901* **VENTILATION**

BREVITY—Identify by IEN - 10498 if you write the maker

## For better metal plating . . .

**SYLPHON TEMPERATURE REGULATOR No. 921**

*Keeps temperature accurate • Cuts Costs*

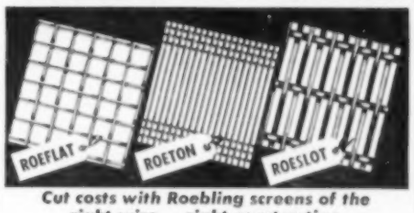
This fully automatic regulator can help you control plating operations better, save money too. By keeping temperature *constant* and preventing over-heating, it helps cut down rough plating and buffing time . . . insures plating *as wanted* . . . reduces break-down of solutions.

Self-powered, easily and quickly adjusted. Stainless steel or lead-sheathed thermostatic bulb. Built to last, and to give trouble-free service. Available with easy-to-read dial indicating thermometer—also with fin type bulb for controlling temperature of gases. Send for free Bulletin TN-20.

**FULTON SYLPHON DIVISION**
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
*Temperature Controls • Bellows Devices • Bellows Assemblies*
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 10499 if you write the maker

# AGGREGATE SCREENS




***Cut costs with Roebling screens of the right wire . . . right construction***

FOR INCREASED service life, Roebling manufactures aggregate screens in Roeflat construction for maximum wearing surface where abrasion is high . . . in Roeton construction to afford increased screening capacity . . . in Roeslot construction for highest screening capacity. Each of these screens is made of either Abraso (high carbon steel), Roetemp (oil tempered steel), or of stainless steel, monel or other alloys.

Send today for Aggregate Screen Catalog W-903 and information that will help you choose the right wire and construction for top service.

**WOVEN WIRE FABRICS DIVISION**
John A. Roebling's Sons Company, Roebling, New Jersey

# ROEBLING

BREVITY—Identify by IEN - 10500 if you write the maker

**BAKER TRUCKS require LESS MAINTENANCE**

*to you this means*
- LESS TIME OUT OF SERVICE
- TOP OPERATING EFFICIENCY
- LOWER OVERALL COST

Baker Trucks are built to give maximum trouble-free service, and designed for easier preventive maintenance and less costly repairs.

Electric dynamic braking saves wear on brake linings and protects truck parts. Service brakes can be adjusted in 5 min., and relined in 50 min.

Power Axle has fewer moving parts and is less subject to wear. Mast assembly can be removed in 20 min. and power axle pulled in 40 min.

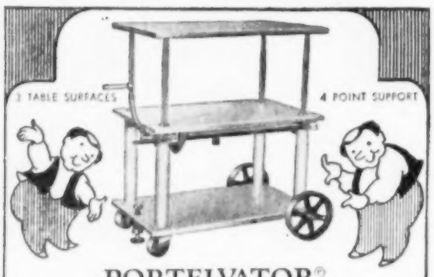
Trailing Axle is the simplest in use on industrial trucks. Can be removed from truck in less than 20 minutes.

These 5 illustrations are from the new 16-page picture-story manual "Care and Maintenance of Industrial Trucks." Write for your copy today.

**BAKER INDUSTRIAL TRUCK DIVISION** *of The Baker-Raulang Company*
1226 West 80th Street, Cleveland 2, Ohio

**Baker INDUSTRIAL TRUCKS**

BREVITY—Identify by IEN - 10501 if you write the maker




## PORTELVATOR®

(THE HANDY HAMILTON PORTABLE ELEVATING TABLE)
LIFTS — LOWERS — LEVELS
TRANSPORTS

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Eliminates the need for extra hands, extra trips.

**STANDARD MODEL CAPACITIES TO 5000 POUNDS**

**SAFETY of OPERATION** is inherent in the **PORTELVATOR** mechanical lift principle, which transmits power through worm, worm gear, and screw.

**TAKE TIME TO LEARN THE DIFFERENCE**
**WRITE FOR BULLETIN P-508**

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 10502 if you write the maker

## 5 Advantages of the ELWELL-PARKER Roll Clamp Truck

Here is why this Elwell-Parker is unmatched for handling roll paper and other materials in roll form—

1. **SNUG STACKING**—because truck's clamp can grip rolls short of their maximum diameter.
2. **ADJUSTABLE CLAMP PRESSURE**—Safe and positive, yet variable for different papers, winding tensions, or wrappers.
3. **NO PALLETS NEEDED**—Saves up to 20% in space.
4. **VERTICAL OR HORIZONTAL HANDLING**—Truck carries and stacks rolls in either position.
5. **NO STOCK DAMAGE**—Many E-P roll handlers repay their costs by eliminating spoilage.

**GET ALL THE FACTS**

*Write for E-P Reporter No. 8. The Elwell-Parker Electric Company, 4064 St. Clair Ave., Cleveland, 3, O.*

**Rolls up to 3500 lbs. are readily handled.**

BREVITY—Identify by IEN - 10503 if you write the maker

## FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

***New! Speedier! More Economical!***

DAYLIGHT OPERATION NO DARKROOM REQUIRED

**Makes up to 5 (18" x 24") Prints a Minute** of anything written, printed, drawn or photographed

**WRITE DEPT. 51-60**

for information showing how FOTO-FLO can speed production and lower photo-copying costs.

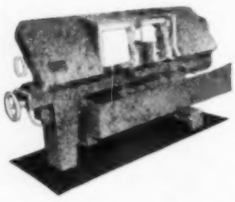
*Reg. U. S. Pat Off.

**HALOID** THE HALOID COMPANY ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo-copying Machines • Photographic Papers

BREVITY—Identify by IEN - 10504 if you write the maker

## SAWING . . Band saw machine, rectangular shape to 12 by 20 inches

**Source: KALAMAZOO TANK & SILO CO.**
**1537 Harrison St., Kalamazoo, Mich.**



**Model 1220** is a new assembly in the company's line of band-saw machines, previously described IEN-12395-49. The new unit doubles the capacity of the previous design in work-section capacity. In addition to taking rectangular shapes to 12 by 20 in., it will cut rounds measuring 12 or more inches in diameter within its capacity.

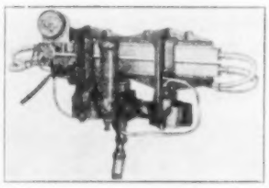
**Four cutting speeds** are between 61 and 259 fpm. A dash-pot mechanism insures controlled constant pressure throughout the cut. A swivel leaf-type 45-deg. vise provides adjustment to angles as well as to cut square. Blade mounting is from the top. The operator has an unobstructed view of the cut.

**Standard equipment** includes a 1-hp. motor for operation on 220/440-volt 60-cycle three-phase ac. A stock stop bar is also provided. Dimensions are 87 by 26 by 25½ in. from floor to bed. Cutting position is shown.

BREVITY—Identify by IEN - 10505 if you write the maker

## PACKAGING . . Heat sealing machine applies on laminated barrier materials

**Source: GLOBE PRODUCTS-HEAT SEAL CORP.**
**3384 Robertson Blvd., Los Angeles 34, Calif.**



**Two jaws** measuring 13 in. in length are employed in this new Aero Seal-It machine. The jaws are electrically heated and are operated by pneumatic pressure from a shop air line. Control centers at a trigger-operated valve built into the handle. Operation is controlled by a timing relay, adjustable for a desired interval. A thermostat regulates the electric heat supplied to the jaws. An indicator shows the set temperature.

**The machine** is built of aluminum. One jaw has a rubber facing to compensate for bunched material along a seam to be sealed. A stand can be supplied for stationary operation. A counterbalance unit is available also to suspend the machine from overhead adjustably.

BREVITY—Identify by IEN - 10506 if you write the maker

## STEELS . . Creep stress data for high-temperature steel printed on card

Babcock & Wilcox Tube Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

**Croloy** and other steels for high-temperature service in tubular form are listed in new Technical Data Card TDC-102-F by analysis and by creep stress in lb. per sq. in. for 1 per cent elongation in 10,000 and 100,000 hours. There is a total of 16 carbon, intermediate and stainless steels in the list.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10507 if you write the maker

## POSITIVE GRIPS

*THE* "HAMMER-LOCK" *and* *Electroline* FITTINGS

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

*Electroline Company*
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

BREVITY—Identify by IEN - 10508 if you write the maker

## *Here are the ANSWERS to your* AC MOTOR STARTER QUESTIONS

***What makes a GOOD Motor Starter?***
● Dependability in operation . . . ruggedly built for hard usage . . . long life . . . requiring little attention . . . easy inspection and maintenance.

***What makes the new CLARK Type "CY" different?***
● An entirely new, advanced principle of arc interruption; combining strong, multi-turn magnetic blowouts and twin-break contacts.

***How does this improve its operation?***
● Constant forced rotation of the arc—moving continuously from a hot to a cold spot, minimizes burning or pitting of contacts.

***How about maintenance?***
● Longer contact life means less service. No filing, dressing or cleaning of contacts required. No tools necessary to inspect contacts. Contacts, coils and other components easily changed. The CLARK Type "CY" is the maintenance man's dream!

***Is it rugged?***
● Mill Type heavy-duty construction and design provide extra protection and dependable operation in severe service.

***Any other advantages?***
● Many—among them the ingenious design of the solid upper arc shield that prevents accumulation of hot gases between wiring terminals, minimizing phase-to-phase failures.

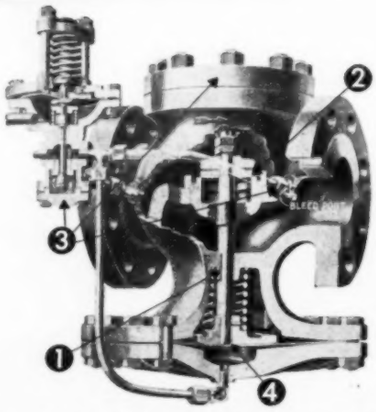
*Let a CLARK application engineer show you what this new line of CLARK Type "CY" starters means to you in increased production and lower maintenance.*

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL • 1162 EAST 152nd STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 10509 if you write the maker

## *Here's Why* SPENCE REGULATORS

**CUT COSTS . . . REDUCE MAINTENANCE**




Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

1. **PACKLESS CONSTRUCTION** of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.
2. **DURABLE SECO METAL SEATS AND DISCS** resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*
3. **EASY TO CLEAN WITHOUT DISMANTLING** — The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*
4. **LONG-LIFE METAL DIAPHRAGMS,** under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

**FREE** BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

ES-104

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 10511 if you write the maker

## FOR EXHAUST VENTILATION OF COMMERCIAL SPACES

## Peerless Electric EXHAUST FANS

● With dependable Peerless Electric construction throughout, Peerless Electric Exhaust Fans do an excellent job of ventilating tailoring and cleaning plants, taverns, kitchens, restaurants, retail stores and similar establishments. These fans are completely designed and manufactured by The Peerless Electric Company, manufacturer of motors, fans and blowers since 1893.

**MOTORS** Long hour duty permanent split capacitor type.

**CONSTRUCTION** The sturdy steel panel mounting simplifies installation and neatly covers the wall opening. Entire fan is finished in attractive Hammerloid baked enamel. Furnished with or without inlet guards and with or without controllers.

**RATINGS** Rated in accordance with Standard Test Codes.

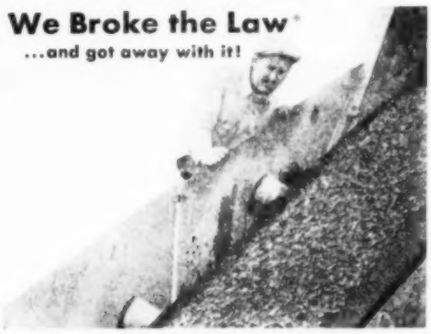
*Write for complete specifications and prices*

**THE PEERLESS ELECTRIC COMPANY**
*Established 1893* • *WARREN, OHIO*

**Peerless Electric MOTORS·FANS·BLOWERS**

BREVITY—Identify by IEN - 10512 if you write the maker

## We Broke the Law*
**...and got away with it!**



Crushed wet rock at Henry J. Kaiser's Radum Plant near Pleasanton, California, just naturally wanted to roll downhill. This presented a serious obstacle to the plans of Kaiser engineers, who were trying to increase tonnage at the sizing screens without the expense of installing an elevator system to lift this extremely wet and muddy rock. Outlining their problem to the Gilmore Steel & Supply Company representative, the Kaiser men were introduced to the use of Boston Woven Hose & Rubber Company's Bull Dog Herringbone Conveyor Belting. This belt, shown here, features a unique top cover of molded chevron designed rubber steps for uphill conveying and provides efficient drainage of water and mud from the belt surface.

Now in service only a little over 16 months, the BWH belt has already established a record of high tonnage at low cost.

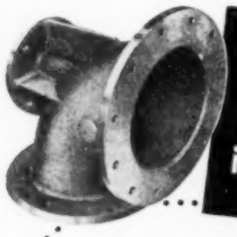
If your application calls for a special construction, let us demonstrate how dependable BWH products can help boost your production and profits, while lowering your costs.

*We refer, of course, to Newton's law of gravity.

Another Quality Product of

**BOSTON WOVEN HOSE & RUBBER CO.**
Distributors in all Principal Cities
PLANT: Cambridge, Mass.•P.O. Box 1071, Boston 3, Mass., U.S.A.

BREVITY—Identify by IEN - 10513 if you write the maker



## how to lick porosity in castings!

### WESTERN SEALANT locks pores permanently

in all types of castings requiring pressure tightness! Trims production costs and delivery delays. Outmodes use of sodium silicate, varnishes, styrenes and phenolics.

**The WESECO Process:** Seals all ferrous and non-ferrous alloys and fibreglass laminates. Is invisible—shows no signs of treatment. Does not affect critical tolerances. Provides highest resistance to heat, chemicals and solvents. Is approved under Army, Navy, Air Force specifications.

24-hour customer service—See your Classified Telephone Directory for nearest WESTERN SEALANT service plant in U. S. or Canada or write direct. FREE DESCRIPTIVE CIRCULAR explains WESECO PROCESS. Ask for your copy!

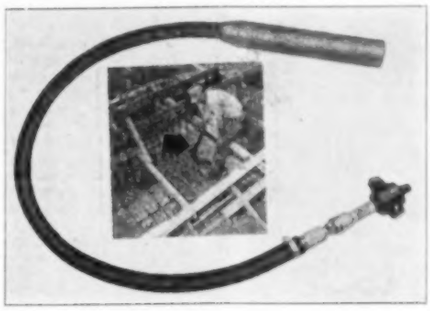
Remember: "If it's **not** WESECO, it's **outmoded!**"

**Western SEALANT COMPANY**
9043-I Culver Blvd., Culver City, Calif.

BREVITY—Identify by IEN - 10514 if you write the maker

## CONSTRUCTION . . Pneumatic vibrator compacts wet concrete poured in a form

Source: INDEPENDENT PNEUMATIC TOOL CO.
173-77 N. State St., Aurora, Ill.



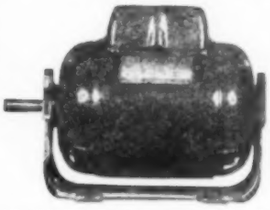
**No. 521** is a new air-operated vibrator consisting of a 2¾-in. steel cylinder measuring 17½ in. in length at the end of a 5-ft. length of combination air and exhaust hose. A ball-bearing rotary air motor and vibrator mechanism are sealed inside the steel cylinder. Control centers at a roll-type throttle which can be set to provide a maximum of 8,000 vibrations per minute.

**An air line oiler** keeps the operating parts lubricated. A steel sleeve around the vibrator mechanism prevents escape of grease from the bearing. The combination air and exhaust hose can be specified in 10, 15 and 20 ft. lengths in place of the standard 5-ft. unit. A 15-ft. length of ¾-in. extension air hose can be employed with the standard 5-ft. length of combination air and exhaust hose.

BREVITY—Identify by IEN - 10515 if you write the maker

## MOTOR . . Single phase, capacitor, resilient base, ½ to 5 hp. sizes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



**New motor** in the company's Tri-Clad line of single-phase capacitor induction units is now available with a resilient base for applications where freedom from vibration and quiet operation are required. The motor is dynamically balanced and is mounted on grease-lubricated ball bearings that will run for several years without attention. Fittings are provided for relubrication when this does become necessary. There are no brushes or commutator. A transfer switch is totally enclosed to keep foreign matter from contacts. The centrifugal mechanism is designed for operation without attention over long periods of time.

**The 5 hp. size** is available for operation on 220 volt, 60-cycle ac. The smaller sizes in the line operate on 110/220-volt 60-cycle ac. Speed is 1,800 rpm. An automatic-reset thermal protecting device can be specified on the 1 to 5-hp. sizes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10516 if you write the maker

## A few turns will do it!...

## BUCKINGHAM... Thread RESTORERS

Just slip on, tighten and turn. That's all there is to it—it's that simple . . . and quick . . . And what *results!*

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads—when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from ¼" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

| | | |
|---|---|---|
| 6103 — ¼" to 1" root diam. | $ 6.50 |
| 6203*— ¼" to 1" root diam. | 8.50 |
| 6104 — 1" to 2⅝" root diam. | 12.00 |
| 6106 — 2" to 4" root diam. | 27.50 |
| 6204*— 1" to 2⅝" root diam. | 21.00 |

*Short swing type.

**BUCKINGHAM MANUFACTURING CO., INC.**
49-51 Travis Street Binghamton, N. Y.

BREVITY—Identify by IEN - 10517 if you write the maker

## SYNTRON ELECTRIC HAMMERS

**Speed Up**

**Drilling—**

**Cutting—**

**Chipping**

**in concrete and masonry**

Drilling holes to hang shafting, anchor machinery, install lighting fixtures—channeling for conduit—cutting openings, etc.

3600 powerful blows per minute make short work of these time-consuming, laborious jobs.

*Write for catalog folder.*

**SYNTRON CO.**
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 10518 if you write the maker

## Starrett DIAL INDICATORS

Starrett Dial Indicators are made in a complete range of four series (A.G.D. groups 1, 2, 3 and 4) and over 54 types, with English or Metric graduations and with many exclusive features which contribute to greater accuracy, efficiency and durability in use. They are especially adapted for mounting on machine tools, production jigs and fixtures and for all quality control applications. Starrett also makes the popular "LAST WORD" Indicator, No. 196A Universal Dial Test Indicator and many other Dial Test Indicators and Dial Gages for special applications.

**FREE! 3 USEFUL AIDS**

WRITE FOR YOUR COPIES
Address Dept. N

**Starrett**
THE L. S. STARRETT COMPANY ATHOL, MASS. U.S.A.
BUY THROUGH YOUR DISTRIBUTOR

BREVITY—Identify by IEN - 10519 if you write the maker

## IF IT'S DEEP DRAWN IT WEIGHS LESS

*WATER TANK . . . for use on concrete mixers and pavers. Capacities up to 60 gallons.*

A Hackney Deep Drawn Shape or Part in your product may mean cost-saving reduced weight . . . that's because Hackney Shapes and Shells are formed under pressure from one piece of sheet metal. Also, the Hackney Deep Drawing Process often can provide other advantages . . . greater strength, less cost, faster production, better appearance.

Hackney Deep Drawn Shapes and Shells have been made in many metals and alloys . . . produced in capacities as small as one quart, as large as 110 gallons. Perhaps our 50 years of specialized experience can help you. Write us for full details.

**PRESSED STEEL TANK COMPANY**
*Manufacturer of Hackney Products*

Hackney
1449 S. 66th St., Milwaukee 14
1322 Vanderbilt Concourse Bldg., New York 17
283 Hanna Bldg., Cleveland 15
936 Peachtree St., N. W., Room 136, Atlanta 3
208 S. LaSalle St., Room 780, Chicago 4
577 Roosevelt Bldg., Los Angeles 14

BREVITY—Identify by IEN - 10520 if you write the maker

Every roll sealed in cellophane stays factory-fresh. Ask your dealer for this handy package of the tape that goes further, wraps right, lasts longer. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape FRICTION RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES


BREVITY—Identify by IEN - 10521 if you write the maker


PERMACEL News Graphic

CUTTING COSTS...SPEEDING PRODUCTION WITH INDUSTRIAL TAPES

WATERPROOFING AND WEATHERPROOFING jobs on Silver Fleet trucks call for PERMACEL-68, a flexible, plastic-coated cloth tape with high tensile strength, extremely good adhesion. Meets Government standards.

FREE!

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INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.

makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry


BREVITY—Identify by IEN - 10523 if you write the maker

## CONVEYING . . Plate equipped chain flexes horizontally and vertically

Source: CHAIN BELT CO.
1675 W. Bruce St., Milwaukee 4, Wis.

**FlexTop** trade names a new design in the company's line of Table Top conveyor chains to handle objects such as bottles, jars, packages, parts, along straight runs and around small radius curves in a closed circuit. Minimum radius is 6 inches. The design eliminates the danger of containers being chipped, tipped or damaged when they are transferred from one chain or one conveyor to another. It permits driving a complete conveyor from one power source.

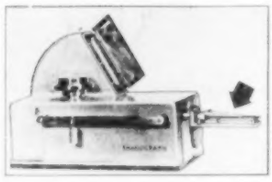
**Individual** plates measure 3½ in. in axial direction by 3¼ in. in width. Maximum working load is 800 pounds. Carbon or stainless steel can be specified. The plates are mounted on links connected by a universal-type joint. Operation is over sprockets with special teeth. The chain can be carried around horizontal idler discs 14 in. in diameter in the place of sprockets, two discs being used at each corner for the run and return strands. The discs are made of cast iron.

**Bulletin 51-60,** "Table Top Chain," presents illustrations, description and specifications on a number of designs.

BREVITY—Identify by IEN - 10524 if you write the maker

## WEIGHING . . Balance scale reads moment weight of jet engine blade

Source: EXACT WEIGHT SCALE CO.
942-46 W. Fifth Ave., Columbus 8, Ohio



**Model 4102-B** is a special scale assembly designed to check the moment weight of jet-engine blades as a product of dead weight multiplied by distance from the fulcrum. A turbine blade is mounted on a lever-extension fixture at a distance from the center pivots in the scale equal to the radius of the blade in actual service. Shift in center of gravity of the blade will not vary the dead weight but will change the distance from the fulcrum and therefore the moment weight. The dial and beam are graduated in moment-weight units so the scale can be read directly. Sensitivity is within 0.00005 inch pound.

BREVITY—Identify by IEN - 10525 if you write the maker

## STEELS . . Booklet describes alternates for steels containing nickel and molybdenum

American Iron & Steel Institute
350 Fifth Ave., New York 1, N. Y.

**Boron-content** steels are suggested as alternates to those containing nickel and molybdenum by new 12-page booklet, "Alternate Steels, Revised." Grades and chemical compositions are listed for these and other alternate steels.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10526 if you write the maker

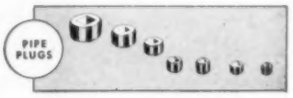

TOUREK

BALL JOINTS • PIPE PLUGS AND QUALITY SCREW MACHINE PRODUCTS

Tourek's quality Ball Joints meet exacting requirements. Simplified design, improved performance, and lower costs result from specifying Tourek Ball Joints . . . the only recognized standard. Large stocks assure prompt delivery.

Tourek's precision countersunk steel pipe plugs are accurate, high strength, and economical—resulting in the highest quality at costs which are competitive to old style plugs.

Stock sizes, available with National Pipe or Dry-Seal threads are: ¼", ⅜", ½", ¾" and 1". Also available on special order in alloy steels, aluminum or brass in sizes up to 2⅝" diameter.




Modern high speed single and 6-spindle automatics—together with complete secondary equipment, including grinding and honing—plus 50 years' experience, assure you "The Best in Quality Screw Machine Products."

Your requirements, up to 2⅝", are made with utmost precision, and with prompt delivery assurances.

LITERATURE

Comprehensive data on any or all Tourek products sent promptly upon request . . . write for yours now. J. J. TOUREK MFG. CO. 4701 W. 16th St., Chicago 50, Ill.

TOUREK

"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1920


BREVITY—Identify by IEN - 10527 if you write the maker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STEELBAND

Leads the Band

Now is the time to order Allegheny STEELBAND strapping, seals, tools, and accessories to insure your present and future needs. Our company is rapidly expanding to meet the growing demand for our products.

ALLEGHENY STEELBAND CO.
Box 716, Pittsburgh 30, Pa.
(WAInut 1-7100)

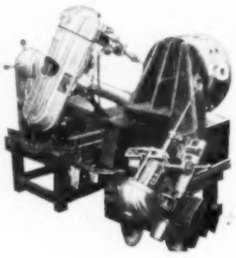
STRAPPING AND SEALS | STEELBAND | ACCESSORIES AND TOOLS


BREVITY—Identify by IEN - 10528 if you write the maker


WALKER-TURNER DRILL HEADS

work at all angles, handle work faster, and cut machining costs

8 SEPARATE OPERATIONS are consolidated into one. Four standard Walker-Turner Drill Heads have been mounted horizontally to drill both ends of two double-end tube closures simultaneously.



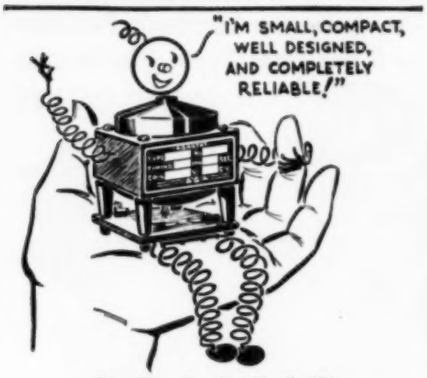
THIS JIG APPLICATION IS TYPICAL OF WALKER-TURNER Drill Head flexibility. Due to weight of the work and the cumbersome special jig required, provision was made for attaching drill heads in correct position. Result: work can be loaded in a natural position, production is speeded.

IF YOU MACHINE steel, iron, aluminum, copper or brass, plastics or wood, investigate the possibilities of adapting these low-cost, high production tools to your specific needs. See your distributor or write for catalog describing Walker-Turner Drill Press Heads for every drilling problem.

SOLD ONLY THROUGH AUTHORIZED DEALERS

WALKER-TURNER • DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

BREVITY—Identify by IEN - 10530 If you write the maker




## AGASTAT
### TIME DELAY RELAY

Solenoid actuated—pneumatically timed. For AC and DC service. A special diaphragm and cap encase the head, providing an enclosed, dustproof timing chamber in which the air used for timing is recirculated. Low cost with dependability.

**AMERICAN GAS ACCUMULATOR COMPANY**
**1027 NEWARK AVENUE • ELIZABETH 3, N. J.**

BREVITY—Identify by IEN - 10531 If you write the maker

## SLITTERS AND ROLLWINDERS

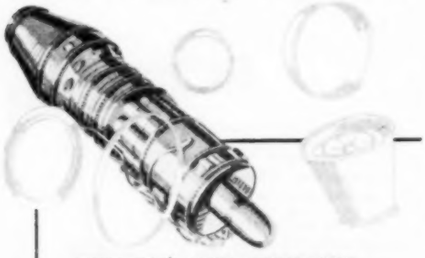
**For all types and sizes of roll-wound products**

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

**CAMERON MACHINE CO.**
**61 POPLAR ST., B'KLYN 2, N.Y.**

**Camachine**
***First in roll production equipment***

BREVITY—Identify by IEN - 10532 If you write the maker



## EVERY* JET ENGINE MANUFACTURER USES "AMERICAN WELDED" COMPONENT PARTS

Welding is our business . . . 53 years' experience . . . complete designing, engineering and metallurgical service.

This is what we offer you if your requirements involve either fusion or resistance welding of either ferrous or non-ferrous metals.

Drop a line to our Product Development Division for our new illustrated catalog which will give you a look at our plant, facilities, and what we do.

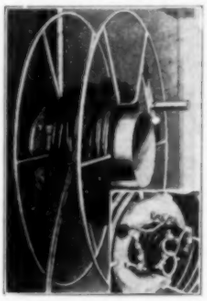
* United States

**THE AMERICAN WELDING & MFG. CO.**
**160 DIETZ ROAD • WARREN, OHIO**

BREVITY—Identify by IEN - 10533 If you write the maker

## RETRIEVING . . Electric cable reel, hand operated, for wall mounting

**Source: INDUSTRIAL ELECTRICAL WORKS**
**1509-13 Chicago St., Dept. 81, Omaha 2, Neb.**



**Port-O-Reel** trade names a new hand-operated reel that will take electric cable to No. 4 four-conductor size. A collector ring assembly in the stationary center portion provides for electrical connection from a conduit that enters at the rear. The reel is available with a 75-amp. collector ring for 2, 3 or 4 conductors or with a 30-amp. ring for as many as 16 conductors. Screw-type binding posts are provided. The mounting flange is fitted with a 1-in. conduit connection. It is drilled for four ⅜-in. mounting bolts.

BREVITY—Identify by IEN - 10534 If you write the maker

## FLOORS . . Abrasive sheet to adhere to steps, ramps, platforms

**Source: AMERICAN ABRASIVE METALS CO.**
**458-62 Coit St., Irvington 11, N. J.**

**Provides safe walking surface**

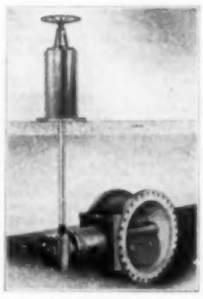
**Fera-Mat** is a new combination of mineral granules resin-bonded to a weatherproof cloth backing. The bottom face of the cloth is coated with a pressure-sensitive adhesive. This face is covered with a liner that is peeled off just prior to application on a surface.

**Standard sizes** are 6 by 24 in. or rolls measuring 6 in. in width by 96 ft. in length. Color is black for the rolls. It is black, red or green for the single pieces.

BREVITY—Identify by IEN - 10535 If you write the maker

## VALVE . . Hinged vane design 16 to 72 in. sizes, 50 lb. standard

**Source: R-S PRODUCTS CORP.**
**4602 Germantown Ave., Philadelphia 44, Pa.**



**A babbitted** seat in the body and Monel Metal or stainless steel welded to the periphery of the hinged disc characterizes the construction of this new No. 788 heavy-duty valve. It is equipped with an enclosed gear head for disc rotation with connection to a handwheel - equipped stand that mounts above the valve as shown in the illustration. A 36-in. size with the babbitted seat has leakage of only 50 gph. with a 350-ft. head of water. Catalog 18, illustrates and describes the valve line.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 10536 If you write the maker

**no coddling pul-leeze**

You can install a Farris Stacon Temperature Regulator and forget all about it. You *know* it will operate positively and accurately under *all* conditions and at *all* times.

The Farris Stacon Temperature Regulator is dirt-proof, trouble-free. It operates with unheard of accuracy—to within plus or minus 1 deg. And that's not just under ideal circumstances. It functions with identical accuracy in the worst possible surroundings—provides air-operated sensitivity at self-operated cost.

Here's why: In patented Stacon Regulators, there are no packing glands to leak or bind. The liquid in the bulb flashes to vapor in the power bellows, providing hair-trigger response to move the valve disc.

You'll want complete details on this accurate and economical temperature regulator. Write for Stacon Bulletin 50-100.

**Farris Stacon Corporation**
432 COMMERCIAL AVE. PALISADES PARK, N. J.

BREVITY—Identify by IEN - 10537 If you write the maker

Over 100 timer operating combinations insure precision timing for your individual problem. Easy-to-read micrometer setting allows quick change from one process to another. The Microflex will increase production of Curing, Heating, Loading, Cooling . . . adaptable to all industrial processes!

*Send for Bulletin 110*

**EAGLE SIGNAL** *Industrial Timers*
EAGLE SIGNAL CORPORATION MOLINE, ILL.

BREVITY—Identify by IEN - 10538 If you write the maker

## NO SEAT!
### TO SCORE . . . WEAR . . . CLOG . . . AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

*SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.*

Cross section of Type "B" Seat-less Angle Valve, Flanged.

**YARNALL-WARING COMPANY**
**122 Mermaid Ave., Phila. 18, Pa.**

**YARWAY BLOW-OFF VALVES**

BREVITY—Identify by IEN - 10539 If you write the maker

## CORD SETS
### *That Are Right On The Beam*

● Cords, Ltd. engineers and builds standard and special cord sets for any application. Proved dependability.

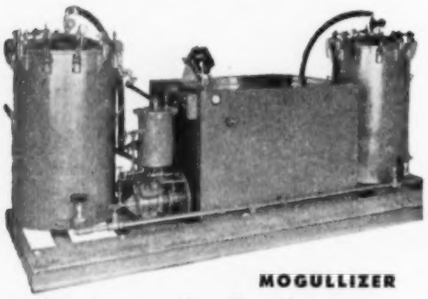
Most comprehensive stock of moulds and dies in existence for production of electronic cords and assemblies.

When you bring your cord problems to us you get the experience of the vast Essex Wire organization, plus integrated production of every component from wire bar to finished assembly. Write for details, explaining application.

WIRE SX PRODUCTS

**CORDS LTD.**
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

BREVITY—Identify by IEN - 10540 if you write the maker



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## Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

*Write today for full details on the Mogullizing system.*

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 10541 if you write the maker

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## Let this man analyze your Industrial Tires and Wheels

THIS man represents *your* local B.F.Goodrich dealer. He and *all* BFG representatives want to offer this service to you. They have been specially trained to analyze your industrial tire and wheel operations and to make impartial recommendations regarding size, type, care and maintenance. These recommendations are valuable to you. In many cases, industrial tire life has been increased as much as 100%! The recommendations this TW man makes are impartial because *only* B.F.Goodrich has a *complete* line of solids, semi-pneumatics and pneumatics in a wide range of sizes.

Call your local BFG representative today. Let him survey your operation . . . study loads, hauls, equipment, floors and hauling surfaces. Then let him offer his suggestions. Extra service from your industrial tires is yours for the asking.

*A similar program is available for the manufacturers of industrial hauling equipment.*

**Write for full details of the TW ANALYSIS PLAN**

The B. F. Goodrich Co.
Department TW-137
Akron, Ohio
Please give me additional information on your new Tire and Wheel Analysis plan.

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B.F.Goodrich

# NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

**ALLOYS** . . "Colmonoy" hard-facing alloys in the form of cast parts; properties, examples of use. "Colmonoy Castings," 6 pages. Diamonds & Tools, 19343-47 John R St., Detroit 3, Mich. **IEN-01164**

**BATTERY CHARGING** . . Automatic units for motorized lift truck batteries; sizes, ratings. Bulletin 11-210, 4 pages. Electric Products Co., 1723-27 Clarkstone Rd., Cleveland 12, Ohio **IEN-01165**

**BEARINGS** . . Pillow blocks with Timken bearings; dimensions, capacity table. Catalog 88, 20 pages. W. A. Jones Foundry & Machine Co., 4399-03 W. Roosevelt Rd., Chicago 24, Ill. **IEN-01166**

**BOILERS** . . "Steam-Pak" steam generator, 525 to 8,625 lb. per hr.; cut-away view, construction points, uses. Bulletin ID-51-114, 14 pages. York-Shipley Co., 18 Jessop Place, York, Pa. **IEN-01167**

**BORING** . . "Cincinnati Hypro" vertical boring and turning mill; specifications, features. Bulletin 54-6, 8 pages. Giddings & Lewis Machine Tool Co., 140-44 Doty St., Fond du Lac, Wis. **IEN-01168**

**CAPACITORS** . . Mica and Faradon-mica units; selection, ratings, JAN numbers. Catalog 420, 60 pages. Cornell-Dubilier Electric Corp., 1000 Hamilton Blvd., South Plainfield, N. J. **IEN-01169**

**CHAMFERING** . . Machine to produce points on screw-machine bars; operations, capacities. "Bar Pointer," 4 pages. Kent Machine Co., 111-15 Portage Terrace, Cuyahoga Falls, Ohio **IEN-01170**

**CHUCKS** . . "Levermatic" and "Handmatic" spindle-nose collet chucks; descriptions, sizes, applications. Catalog, 8 pages. Sutton Tool Co., 51 Taylor St., Sturgis, Mich. **IREN-01171**

**CLAMPS** . . For wiring and tubes as in aircraft: drawings, AN specifications, tracing sheet. 1951 Manual, 34 pages. Thomas Associates, 4605-9 Alger St., Los Angeles 39, Calif. **IEN-01172**

**CLEANING** . . Equipment to clean contaminated mercury; principle, instructions, models. "Mercury Cleaning," 4 pages. Bethlehem Apparatus Co., 823 Front St., Hellertown, Pa. **IEN-01173**

**CLEANING** . . . Materials for metal cleaning in washing machines; descriptions, instructions. "Metal Cleaning," 6 sheets. Du Bois Co., 1118-22 W. Front St., Cincinnati 3, Ohio **IEN-01174**

**CLEANING** . . Materials for metal cleaning; suggested application procedures by metal. "Some Good Things to Know," 44 pages. Oakite Products Inc., 116-A Thames St., New York 6, N. Y. **IEN-01175**

**CLEANING** . . Hand cleaning material for industrial use; description, performance, also a dispenser. "Formula SBS-11," 4 pages. Sugar Beet Products Co., 301 Waller St., Saginaw, Mich. **IEN-01176**

**COMPRESSORS** . . Centrifugal blowers and compressors, 1,000 to 150,000 cfm.; descriptions. Bulletin 0500, 52 pages. De Laval Steam Turbine Co., 851-55 Nottingham, Trenton 2, N. J. **IEN-01177**

**COMPRESSORS** . . Trailer unit, 160 ft., gasoline or diesel; specifications. Bulletin H-850-B73, 6 pages. Worthington Pump & Machry. Corp., 423 Worthington Ave., Harrison, N. J. **IEN-01178**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10543 if you write the maker

**Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.**

**Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.**

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MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
1633 E. SPRING STREET • CHIPPEWA FALLS, WIS.

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## For Uniform, Constant Pressure on Any Size or Type of Installation OIL-RELIEF VALVES

FULFLO

DO A GOOD JOB

**Regulating oil pressure is always mighty important because the life of your equipment actually depends on it. FULFLO OIL-RELIEF VALVES are installed easily, quickly and just where needed and wanted.**

**Available in ¼" to 2" standard pipe thread and STD 300 lb. American flange valves 1" to 2".**

CHATTERLESS

*Photo shows Fulflo Valves on a big locomotive Diesel*

Write on your letterhead for copy of FULFLO MECHANICAL DATA BOOK

THE FULFLO Specialties Co., Inc.
BLANCHESTER, OHIO

BREVITY—Identify by IEN - 10545 if you write the maker

## Specify this oil seal to save space!

Clipper Seal's narrow flange sections permit minimum depths for oil seal cavities, thereby allowing engineers greater design freedom in the present trend toward more compact and efficient machines.

In addition to saving space, there are other important reasons why Clipper Seals are specified today:

**(1)** Their tough one-piece rigid heel and resilient inner lip retains oil with light but positive sealing contact, protecting bearings against grit, moisture and corrosive fumes.

**(2)** Both endless and split type seals, with specially designed garter springs, help speed assembly of precision parts—make maintenance quicker and easier.

If simplicity of design is your problem, then use Clipper Seals. They're available in a variety of lip designs for different bearing surfaces, to fit shafts of ¼" to 66" in diameter, and for temperatures to 450F. For more complete information, send for brochure PK-46A. Address: Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville CLIPPER SEALS

BREVITY—Identify by IEN - 10546 if you write the maker

## Wilsonize TO ECONOMIZE

Yes, tube maintenance problems are cut down to size . . . *and* savings start to rise . . . when you Wilsonize your tube cleaning and expanding equipment. That's because powerful, fast-acting Wilson Tube Cleaners assure more thorough, quicker removal of deposits from curved or straight tubes. Parallel rolling Wilson Tube Expanders give you tighter joints, eliminate the need for frequent re-rolling.

Wilsonizing means equipment goes back on the line faster, production stays in' high gear, maintenance costs are radically reduced. Send for 48-page Bulletin on complete Wilson Tube Cleaner line and for Tube Expander Catalog. A single request brings both.

THOMAS C. WILSON, INC.
21-11 44th AVENUE, LONG ISLAND CITY 1, N. Y.

WILSON

WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

BREVITY—Identify by IEN - 10547 If you write the maker

*We don't have to teach our people how to use this extinguisher!*

No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy $CO_2$ kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to

RANDOLPH LABORATORIES, INC.
6 E. Kinzie St.
Chicago 11, Ill.

BREVITY—Identify by IEN - 10548 If you write the maker

IT'S PACKED WITH SATISFACTION WHEN IT'S PACKED WITH R/M

Typical of the hundreds of different types of equipment packed with Raybestos-Manhattan packings is this high-pressure rotary air compressor. The complete R/M line includes packings and gaskets for service against air, gas, water, oil, steam, petroleum products, chemicals, food products, and practically every gas or liquid used in industry. Your nearby R/M distributor will help select the proper packing or gasket to meet your needs. Or write for the R/M Packing Catalog.

R/M PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn.; Manheim, Pa. No. Charleston, S.C.; Passaic, N.J.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles • Mechanical Rubber Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings Fan Belts • Radiator Hose • Powdered Metal Products • Bowling Balls

## NEW LITERATURE—Continued

*"Arranged by subject in A-Z order"*

**CONSTRUCTION** . . "Moto-Mixer" truck-mounted concrete mixers; illustrated construction details. Bulletin 51-29, 24 pages. Chain Belt Co., 1675 W. Bruce St., Milwaukee 4, Wis. IEN-01179

**CONTRACT WORK** . . Dials, panels, cabinets fabricated and finished; examples. "Facilities Folder," 6 pages. Electro Chemical Engraving Co., 1102 Brook Ave., New York 56, N. Y. IEN-01180

**CONTRACT WORK** . . In metal housings, parts, shapes, for defense work; examples, facilities. Bulletin, "If," 16 pages. H. K. Lorentzen, Inc., 393 W. Broadway, New York 12, N. Y. IEN-01181

**CONTROLS** . . Pressure-operated multi-pump controls for elevated tank liquid level; schematics. Bulletin 1210, 4 pages. Automatic Control Co., 1003-7 University Ave., St. Paul 4, Minn. IEN-01182

**CONTROLS** . . For furnace draft; wiring diagrams. Bulletin 5, gas burner; Bulletin 6, oil burner; Bulletin 7, stoker; 4 pages each. Perfex Corp., 502 W. Oklahoma Ave., Milwaukee 7, Wis. IEN-01183

**CONTROLS** . . "Transet" pneumatic remote controls for process variables; components, performance. Bulletin 98097, 24 pages. Taylor Instrument Cos., 60 Ames St., Rochester 9, N. Y. IEN-01184

**CONVEYING** . . Portable roller and wheel conveyors, accessories, uses, illustrated review. Bulletin 15, 8 pages. E. W. Buschman Co., 4447 Clifton Ave., Cincinnati 32, Ohio IEN-01185

**CONVEYING** . . "Rex" belt conveyor idlers; types, design points, dimensions, trippers, selection data. Bulletin 51-81, 44 pages. Chain Belt Co., 1675 W. Bruce St., Milwaukee 4, Wis. IEN-01186

**CRUSHING** . . Machine to reduce metal turnings to chips; sectional view, capacity. "Metal Turnings Crusher," 8 pages. American Pulverizer Co., 1441 Macklind Ave., St. Louis 10, Mo. IEN-01187

**CUTTING** . . Non-ferrous cast alloy for metal-cutting tools; types, speeds and feeds, suggestions on grinding. Bulletin 101, 4 pages. Crobalt Inc., 2802 S. State St., Ann Arbor, Mich. IEN-01188

**CYLINDERS** . . Double-acting pneumatic cylinders; drawings, dimensions on 28 models. Catalog Section 55, 12 pages. Rivett Lathe & Grinder Inc., 20-24 Riverview Rd., Brighton 35, Mass. IEN-01189

**DRAFTING** . . Plastic stencils for isometric and dimetric drawings; descriptions, list prices. Folder, 4 pages. John R. Cassell, 110 W. 42nd St., 2nd floor, New York 18, N. Y. IEN-01190

**DRILLING** . . Jig bushings, listed by ASA sizes with designations for 8 other makers. Price List, 8 pages. Ace Drill Bushing Co., 5403 Fountain Ave., Los Angeles 29, Calif. IEN-01191

**DRILLING** . . Portable electric drills, saws, grinders, sanders, shears; data on tools and accessories. Catalog 96, 96 pages. Stanley Electric Tools, 302 Myrtle St., New Britain, Conn. IEN-01192

**DRIVES** . . Worm-gear speed reducers; illustrated application examples on a range of equipment. "Finest," 8 pages. Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio IEN-01193

**DRIVES** . . Variable-speed magnetic drive; description, applications. Bulletin 4400-TEC-1107, 36 pages. Electric Machinery Mfg. Co., 1335 Tyler St., Minneapolis 13, Minn. IEN-01194

**DRIVES** . . Flexible shafting for power transmission; selection chart, design points, fittings, uses. Bulletin 207, 8 pages. Elliott Mfg. Co., 348-52 State St., Binghamton, N. Y. IEN-01195

**DRIVES** . . "Roto-Cone" variable-pitch motor sheaves; selection data, dimensions, adjustable motor base. Catalog 651, 32 pages. Gerbing Mfg. Corp., 11803 Milwaukee, Northbrook, Ill. IEN-01196

**DRIVES** . . Stock roller chain and sprockets; selection, applications, dimensions, list prices. Catalog C-55-50, 32 pages. Morse Chain Co., 7603 Central Ave., Detroit 8, Mich. IEN-01197

**ELECTRIC POWER** . . Packaged plant distribution equipment; picture review, examples, literature. Bulletin GEA-5600, 24 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. IEN-01198

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BREVITY—Identify by IEN - 10550 If you write the maker

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

**BLUEPRINT TO FASTER PRODUCTION:**

***a faster way to duplicate blueprints***

In a full-color illustrated folder, Remington Rand outlines the advantages to production-minded engineers of PORTAGRAPH, the versatile, easy-to-use contact printer.

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BREVITY—Identify by IEN - 10551 If you write the maker

**Get the ONE flexible coupling that gives you single chain simplicity plus divided rollers**

ONLY Link-Belt "RC" Flexible Couplings give you both. Divided rollers of Precision Steel Roller Chain equalize load . . . maintain proper balance at high speeds . . . adjust to reasonable misalignment and end float. Single-chain width means simplicity and economy.

There's a Link-Belt Roller Chain Coupling for ratings from fractional to 1000 hp. For complete information, write for Folder 2363.

"RC" Couplings available in 30 sizes, ½ to 12 in. bore.

LINK-BELT
"RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in principal cities.

BREVITY—Identify by IEN - 10552 If you write the maker

*More time for creative drafting!*

Kodagraph Autopositive Paper has helped the Cleveland Crane and Engineering Company turn hours of costly retracing time into hours of creative drafting time.

Here are two typical examples which may suggest savings in your work.

**Time saved . . . when drawings must be changed.** Instead of making a new drawing—which in many cases would be 85% retracing—Cleveland Crane reproduces the original on low-cost Kodagraph Autopositive Paper. Then the draftsman eradicates the unwanted detail from this positive photographic intermediate . . . and substitutes the new design. Thus, a brand-new "original" is prepared in a fraction of the usual time.

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**Learn** other ways revolutionary Kodagraph Autopositive Paper can help you. *Write today* for a free copy of the new illustrated booklet, "Modern Drawing and Document Reproduction."

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

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# Cut Clock Watching

...IN TIMING ANY PROCESS

Automatic INTERVAL TIMER
(TYPE T-48)

Let the T-48 give you to-the-second timing of process or laboratory operations. It frees operators for other work. And it's so easy to set up—simply plug in and use. Low in cost, too . . . $16.99 list.

Four different models—12-hour, 2-hour, 15-minute, and 120-second—offer a wide range of applications. And its expanded scale makes it easy to set, assures greater accuracy. Push-button start and automatic reset make repeat work a snap. Operates on 110-120 volt, 60 cycle AC; max. load, 1200 watts.

Many uses in laboratory, industry or home. See your nearest G-E representative.

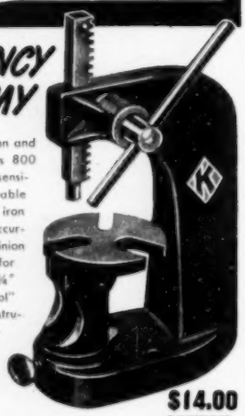
**Write for Bulletin.** Ask for GEA-5108. Write Section 603-91, Apparatus Dept., *General Electric, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 10555 if you write the maker

THE HP-600
# ARBOR PRESS

For EFFICIENCY and ECONOMY



For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Ram and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

Straightening attachment available at $4.95.

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Write for further information.

H. D. HERDER TOOL SPECIALTIES
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BREVITY—Identify by IEN - 10556 if you write the maker

IF YOU WALK ON IT

IT CALLS FOR

OPEN STEEL FLOORING

If you are planning a new building, or of modernizing old walking surfaces indoors or out, look into the advantages of open steel flooring . . . the versatile flooring . . . now! New catalog illustrates and describes wide range of modern applications, its safety features, strength, simplicity of installation and maintenance. Send for a copy.

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write today

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These Manufacturers assure top quality engineered grating.

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STANDARD STEEL SPRING CO. Gary, Indiana
WALTER BATES CO., INC. Joliet, Illinois
THE TRI-LOK COMPANY Pittsburgh, Pa.
BLAW-KNOX COMPANY, Pittsburgh, Pa.

## NEW LITERATURE—Continued

*"153 reviews on 90 subjects"*

**ELECTRONIC TUBES** . . "Five-Star" high-reliability miniature tubes; manufacture, data on 9 types. Bulletin ET-B29A, 8 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-01199**

**ELEVATORS** . . Tubular steel hoisting towers to 2½ ton; illustrated construction details. Bulletin T-6, 4 pages. Beaver Art Metal Corp., 1221 Factory Ave., Ellwood City, Pa. **IEN-01200**

**ELEVATORS** . . Drop tables for diesel locomotive servicing; pit layouts, installation pictures. Bulletin DT-C-404, 24 pages. Whiting Corp., 15629 S. Lathrop Ave., Harvey, Ill. **IEN-01201**

**ELEVATORS** . . Material hoisting tower and a portable tower elevator; details. Data Sheets PS-28C and PS-28P, 2 pages each. Wilson-Albrecht, 3578 Woodale, Minneapolis 16, Minn. **IEN-01202**

**ENGINES** . . Series-71 dual-fuel engines; construction data on 100 to 400-hp. units. Folder 6-SA-19, 8 pages. Detroit Diesel Engine Div., General Motors, 13402 W. Outer Dr., Detroit 28, Mich. **IEN-01203**

**EQUIPMENT** . . Review of company's liquid-handling, coin, lock, hardware, refrigerating, test equipment. "1001 Ways", 12 pages. Bowser Inc., 1338 Creighton Ave., Fort Wayne 2, Ind. **IEN-01204**

**FASTENINGS** . . Metal and bonded-neoprene washers for roofs, other uses; types, application notes. Pocket folder 502, 6 pages. Fabricated Products Co., Box 127-A, West Newton, Pa. **IEN-01205**

**FASTENINGS** . . Cold-forged socket-head cap screws, set screws, pipe plugs, wrenches, sizes, list prices. Catalog 51, 28 pages. Holo-Krome Screw Corp., 33 Brooks St., Hartford 10, Conn. **IEN-01206**

**FASTENINGS** . . Threaded steel bar, ¼ to 2½ in., any length; description, examples. "Threaded Bar Service", 2 pages. Joseph T. Ryerson & Son, Inc., Box 8000-AA, Chicago 80, Ill. **IEN-01207**

**FASTENINGS** . . Socket-head cap screws, set screws, dowel pins, keys; standard sizes, list prices. "Unbrako Standards", 10 sheets. Standard Pressed Steel Co., Box 555, Jenkintown, Pa. **IEN-01208**

**FEEDING** . . "Jeffrey-Traylor" electric vibrating feeders and conveyors; standard units, application pictures. Catalog 830, 86 pages. Jeffrey Mfg. Co., 914 N. 4th St., Columbus 16, Ohio **IEN-01209**

**FILTERING** . . Expanded-fiber replaceable units to catch paint overspray; application data. Bulletin 1167, 12 pages. Research Products Corp., 1013-17 E. Washington, Madison 10, Wis. **IEN-01210**

**FLOORS** . . Mastic underlayment materials for floor coverings; application steps. Folder 1-F-12, 4 pages. Flintkote Co., 30 Rockefeller Plaza, Rm. 4111, New York 20, N. Y. **IEN-01211**

**FLOORS** . . Patching and resurfacing materials for floors and roofs; picture summary. "Building Maintenance", 4 pages. Stonhard Co., 1304-8 Spring Garden St., Philadelphia 23, Pa. **IEN-01212**

**FLOORS** . . Materials to seal, clean, polish wood and concrete floors; instructions, procedures. "Floor Maintenance", 12 pages. Tremco Mfg. Co., 8703 Kinsman Road, Cleveland 4, Ohio **IEN-01213**

**FLOORS** . . "Plastic Rock" resurfacing material; grades, properties, applications. Bulletin 200, 8 pages. United Laboratories Inc., 16803 Euclid Ave., Cleveland 12, Ohio **IEN-01214**

**GAGES** . . Pressure transmitters and a differential cell; operation, range. Data folder 61, 69, 70, 71, 4 pages each. Automatic Temperature Control, 5212 Pulaski, Philadelphia 44, Pa. **IEN-01215**

**GAGES** . . Pneumatic comparator gages; schematic operating diagram, models, applications, specials. Bulletin 8004, 24 pages. Moore Products Co., Lycoming & H Sts., Philadelphia 24, Pa. **IEN-01216**

**GAGES** . . Plug, ring and thread gages; sizes and list prices, special gages, application data. Catalog 51, 50 pages. Republic Gage Co., 2226-30 Fenkell Ave., Detroit 21, Mich. **IEN-01217**

**GRINDING** . . No. 2 cutter and tool grinder machine; specifications, attachments, uses. Bulletin M-1734, 44 pages. Cincinnati Milling Machines, Marburg & Kline, Cincinnati 9, Ohio **IEN-01218**

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BREVITY—Identify by IEN - 10557 if you write the maker

A PAID NEWS ADVERTISEMENT BY CLIPPER MFG. CO.

SAW CONCRETE AND ASPHALT

**Maintenance costs slashed by sawing patches, trenches, contraction joints before breaking**

Now concrete can be sawed! By precision sawing of repair patches (traffic-damaged floors, spalled joints, etc.), tremendous savings are made. A sawed cut made ¼ the slab depth provides a perfect plane of weakness for breaking. Only perfectly smooth, straight edges remain.

On new construction, sawing contraction joints in poured slabs replaces costly hand forming and eliminates the usual spalling and high maintenance costs.

A variety of "DUSTLESS" Clipper Concrete Saw models to suit every plant need are available. While the 7½ and 13½ H.P. Models C-75 and C-130 are most popular, electrically-powered models are available for sawing in confined space.

The manufacturer need only to know the type of concrete aggregate or asphaltic concrete for proper selection of Clipper Metal Bonded Diamond Blades to accomplish the cutting.

*Illustrated data available from*

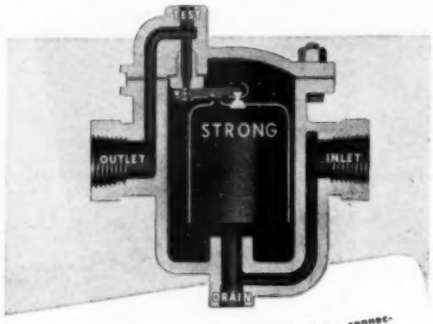
CLIPPER MANUFACTURING COMPANY
11 E. 28th Street, Kansas City 8, Mo.

BREVITY—Identify by IEN - 10558 if you write the maker

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

BREVITY—Identify by IEN - 10559 if you write the maker

# Get this SMALL TRAP With BIG TRAP quality features!




- Renewable seat—easily removed for servicing.
- Strong's patented, wear-resistant Anum-Malt† valve and seat—guaranteed leak-proof for one year. Scientifically designed Hi-Cap* orifice gives greater capacity.
- Oversized ports—increased capacity.
- Horizontal inline connections—simplifies piping.
- Stainless 18-8 high ratio leverage.
- Large gasket area.
- Seamless, deep drawn, stainless 18-8 bucket—no welds.
- Bottom drain or inlet connection.

Available for pressures from 0 to 150 p.s.i., the Strong* No. 070 fits all standard trap applications. Built especially for use on laundry, restaurant and hospital equipment and in industry wherever small drainage is a problem.

As with all Strong Semi-Steel Traps, the 070 is guaranteed against defects in material and workmanship for one year. Write today for Catalog 68-L.

*T. M. Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY
1392 WEST 3rd Street
Cleveland 13, Ohio
†Anum-Malt Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES

Reducing Valve — Blast Trap — "SY" Strainer

STRONG

BREVITY—Identify by IEN - 10561 if you write the maker

# Leach RELAYS

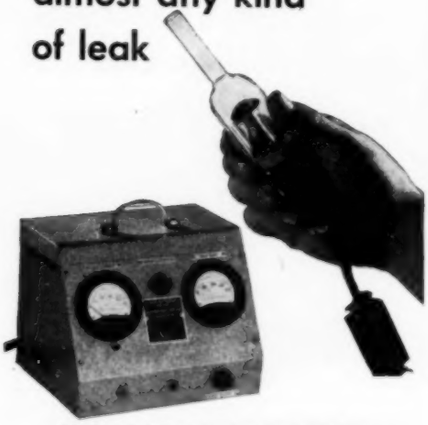
**Precision is the Keynote—in Production and Performance**

The word precision perfectly characterizes every relay manufactured by LEACH, and this precision is most apparent in their performance. Whatever the purpose, LEACH can provide relays of advanced design for flexibility, economy and unexcelled performance. Highest standards of engineering, materials and workmanship.
For better controls through better relays—contact LEACH.

**LEACH RELAY CO.**
5915 AVALON BOULEVARD, LOS ANGELES 3, CALIF.
Representatives in Principal Cities of U. S. and Canada

BREVITY—Identify by IEN - 10562 if you write the maker

# here's a simple device to locate almost any kind of leak



## NEW DPi LEAK DETECTOR
## MODEL LD-01

All you do is seal the sensitive element into the system being tested and bring the interior to a pressure of 10 mm Hg or less. Then you direct a small jet of harmless Freon Gas at suspected spots and watch the meter. It's as simple as that, and sensitivity is high enough even where one-millionth of atmospheric pressure is to be maintained.

It works like this: The sensitive element contains a heated platinum anode and a cold cathode with relatively low voltage between them. The tendency of hot platinum to emit positive ions is enormously stimulated by infinitesimal traces of halogens or their compounds. The circuit to accomplish all this uses only three standard radio tubes and operates from your 115-v a-c lighting circuit.

For full information write *Distillation Products Industries*, Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

DPi **high vacuum research and engineering**

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 10564 if you write the maker

## BOILER . . Self contained assembly, water tube design, oil fired operation

Source: VAPOR HEATING CORP.
78-82 E. Jackson Blvd., Chicago 4, Ill.

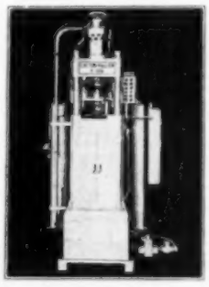
**Model 4740**, originally developed to heat diesel-powered passenger trains, is now available for general industrial use to supply steam for power and process uses in a pressure range between 75 and 600 pounds. The unit will develop 200-lb. pressure in two min. starting with water at 50 deg. F. It will produce 4,800 lb. of steam per hr. from and at 212 deg. F. Efficiency is rated at 82 per cent for the boiler assembly.

**The burner** uses No. 2 fuel oil and fires into a combustion space surrounded by 702 ft. of steel tube. Operation is started by turning a switch after which automatic controls take over for "on-off" operation to produce steam only as it is needed. Water pump, fuel pump, blower and magneto, are driven by a motor or, to specification, by a gasoline engine. Operation can be set in a range between 30 per cent and full capacity. Safety controls are included as standard equipment. The boiler meets ASME and Hartford specifications. Overall dimensions are 52 by 76 by 78 inches.

BREVITY—Identify by IEN - 10565 if you write the maker

## PRESS . . Hydraulic machine to manufacture powdered metal parts

Source: ARTHUR COLTON CO.
3422 E. Lafayette Ave., Detroit 7, Mich.



**Three** hydraulic cylinders are assembled in this new No. 6 hydraulic press, one to act downward from the top and two in concentric assembly to act upward from the bottom and provide ejecting movement. In the center of the inner piston, in the bottom assembly, is a stationary core rod. Pressure is supplied at 600 lb. for rapid approach and at 3,000 lb. for power movement by three 10-hp. Racine hydraulic pumps with 5 to 1 intensifiers. The press is rated at 12 cycles per min. with a capacity fill.

**Two sizes** of machine rate 100 and 125 ton. Both have maximum 6-in. die fills and pressing movements of 1 in. from both the top and the bottom. Powder is fed by a reciprocating cup and adjustable hydraulic agitator. Provision is made for quick change of punches and dies. The die table has an opening of 8¾ in. through the table and an additional opening of 10¾ in. for the flange. Overall dimensions are 42 by 42 by 153 inches. Separate hydraulic power unit occupies a space measuring 6 by 6 feet. It is not illustrated.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 10566 if you write the maker

# SKINNER STAINLESS STEEL SOLENOID VALVES

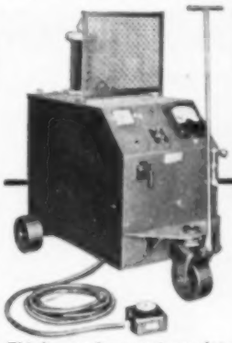
***Small size — Rugged — Large capacity***

The small size of Skinner Solenoid Valves belies their rugged construction and unusually large capacity. These valves have a standard range from 5 to 250 p.s.i., and a special range from 5 to 850 p.s.i., and can be used for gaseous or liquid media. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories.

*Write for Bulletin No. 501*

**SKINNER ELECTRIC VALVE DIV.**
THE SKINNER CHUCK COMPANY
139 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 10567 if you write the maker



# Portable Tester

**50,000 VOLTS**
**5 KVA**

This is one of our most popular a-c testing equipments—suitable for testing motors up to approximately 200 hp and transformers up to about 2500 kva.

Operates on 60-cycle, 115/230-volt supply. Provides smooth, stepless test voltages over the entire range from practically zero to 50 kv. Has accurate, double-scale voltmeter and is equipped with an air circuit breaker with overload trip. Safety features—including foot switch, grounding lead, screen, and signal lamp—protect operators.

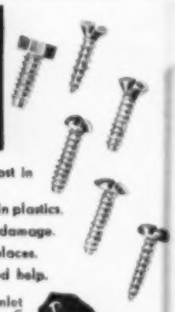
All wheels are equipped with roller bearings. Projected floor space is 41" x 26"—over-all height is 44".

For information on G-E's complete line of portable a-c high-potential test sets, write for Bulletin GEC-612, *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

**GENERAL ELECTRIC**

BREVITY—Identify by IEN - 10568 if you write the maker

# Pheoll TAPPING SCREWS Cut Assembly Costs 5 Different Ways



1. End tapping time and tap cost in sheet metal.
2. Eliminate need for tapped inserts in plastics.
3. Stop thread stripping and part damage.
4. Simplify assembly in tight places.
5. Speed production with unskilled help.

● Pheoll tapping screws—Type A Gimlet Point, Type B Blunt Point, and Type C Taper Point—save assembly time. These case-hardened steel screws are available in round, flat, oval, pan, and truss head types, either slotted or with Phillips recess, or they may be furnished with hexagon type heads. Finishes include bright steel, plated nickel, cadmium, brass, zinc or Parkerized, with chromium, bronze, etc., as special finishes. Types A and B tapping screws are carried in stock; Type C screws are made to order. Ask for further details.

Other Pheoll Products
Machine Screws, Machine Bolts
Special Screws and Bolts
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Wood Screws Thumb Screws
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**Pheoll** MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS *Industrial Fasteners and Holding Devices*

BREVITY—Identify by IEN - 10569 if you write the maker

# WHITNEY ROLLER CHAIN *Flexible Couplings*

**FOR YOUR DIRECT POWER DRIVE APPLICATIONS**

Whitney Roller Chain Flexible Couplings offer the equipment manufacturer and machine user a practical and efficient unit for connecting power equipment to direct drives. All steel construction . . . precision roller chain and hardened cut tooth sprockets provide positive operation . . . assure long life.

Check these Whitney Flexible Coupling features, easily installed, allows for motor end float, disconnects without removing shafts or bearings, allows for slight shaft misalignment.

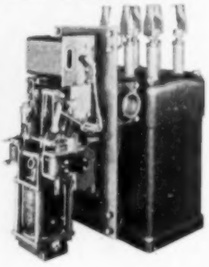
You can use Whitney Flexible Couplings wherever a positive yet flexible direct drive is required. Write for information.

**WHITNEY CHAIN COMPANY**
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 10570 if you write the maker

# FULL ELECTRICAL PROTECTION
## that Lasts for Years

**ALLIS-CHALMERS INDOOR OIL CIRCUIT BREAKERS**



**INDUSTRIAL ELECTRICAL SERVICE**

2300 to 13,800 volts — Up to 500,000 kva interrupting capacity

Type D-20, 7.2 kv, 600 amp, 50,000 kva interrupting capacity oil circuit breaker with solenoid operator and automatic trip.

FOR DEPENDABLE PROTECTION of your electrical equipment, investigate the Allis-Chalmers breaker type that will meet your requirements.

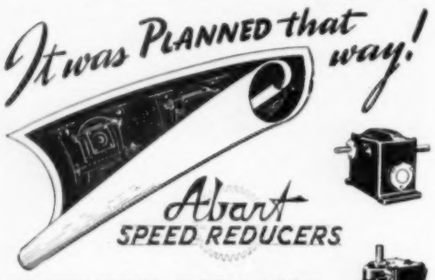
Low maintenance, long life and reliable performance in these modern breakers are the result of over 50 years circuit breaker experience (air or oil). Allis-Chalmers circuit breakers for industry and electric power utilities range from 2500 to 230,000 volts, 15,000 to 10,000,000 kva interrupting capacity.

For complete information on the breaker for your requirements, contact your nearby A-C sales office or write Allis-Chalmers, Milwaukee 1, Wisconsin, specifying voltage and interrupting capacity. A-3504

**ALLIS-CHALMERS**

BREVITY—Identify by IEN - 10571 if you write the maker

*It was PLANNED that way!*



*Abart* SPEED REDUCERS

**TO FIT YOUR EVERY NEED**

Through years of experience and careful planning, Abart engineers have developed a speed reducer to fit your product . . . to meet your every need. Regardless of the required input and output, or whether you need a single or double reduction, there is an Abart Speed Reducer to do the job better . . . to give you long service life. They are available in 75 different models with ratings from 1/50 to 168 hp. and with ratios up to 10,000 to 1. Compact. Oil-tight. Dust-free.

*SEND FOR CATALOG*

It will aid you in selecting the Abart Speed Reducer which is exactly suited to your needs.

**ABART GEAR & MACHINE CO.**
4833 WEST 16th STREET, CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

BREVITY—Identify by IEN - 10572 if you write the maker

**1 heater or 100** *Easily, Quickly Installed*

Even, economic, fully automatic heating can be yours this winter in your home, office, store or factory. Installations of one unit or complete systems of two to one hundred or more units are made in surprisingly fast time and at unexpectedly low costs. Write for Catalog U-50.

**REZNOR**
AUTOMATIC GAS UNIT HEATER

*World's largest selling gas unit heater*

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## NEW LITERATURE—Continued

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**GRINDING** . . "Xpeditor" small abrasive-belt machine; description, specifications, examples of use. Bulletin X-2, 4 pages. Heston & Anderson Div., 610 Kirkwood Ave., Fairfield, Iowa **IEN-01219**

**GRINDING** . . Abrasive-belt machines for wet or dry grinding; detail specifications, uses. Catalog 400, 28 pages. Porter-Cable Machine Co., 1712-16 N. Salina St., Syracuse 8, N. Y. **IEN-01220**

**GRINDING** . . Metal-bonded diamond wheels and files; sizes, list prices, application notes. "Sample-Marshall Tools", 8 pages. Triangle Equipment Co., 43-47 River Road, Nutley 10, N. J. **IEN-01221**

**HEATING** . . Induction furnaces for heating or melting; description, application selector chart. Bulletin 27-A, 8 pages. Ajax Electrothermic Corp., 34 Ajax Park, Trenton 5, N. J. **IEN-01222**

**HEATING** . . Radiant ceiling that also provides sound insulation; schematic, construction features. Bulletin 185, 4 pages. Burgess-Manning Co., 747-51 Park Ave., Libertyville, Ill. **IEN-01223**

**HEAT TREATING** . . Annealing covers, carburizing boxes, in light-gage alloy; examples. Two bulletins, 4 pages each. Pressed Steel Co., 703-7 Pennsylvania Ave., Wilkes-Barre, Pa. **IEN-01224**

**HEAT TREATING** . . Fuel-fired furnaces for small-caliber ammunition; examples, capacity figures. Bulletin SC-153, 4 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio **IEN-01225**

**INSULATING** . . "AlSiMag" ceramic insulators for oil burner ignition electrodes; standard units. Bulletin 511, 4 pages. American Lava Corp., 851 Cherokee Blvd., Chattanooga 5, Tenn. **IEN-01226**

**INSULATING** . . "Powerhouse" thermal insulating and finishing cement; performance chart, properties. Pocket Folder J-31, 8 pages. Baldwin-Hill Co., 502 Breunig Ave., Trenton 2, N. J. **IEN-01227**

**INSULATING** . . "Thermalite" magnesia pipe covering, ¼ to 18-in. pipe; thickness table. Bulletin 9-0, 4 pages. Ehret Magnesia Mfg. Co., 51 Ehret St., Valley Forge, Pa. **IEN-01228**

**INSULATING** . . "Foamglas" insulation for piping and equipment; sizes, shapes, instructions. Bulletin G-1839, 24 pages. Pittsburgh Corning Corp., 305-9 Fourth, Pittsburgh 22, Pa. **IEN-01229**

**ISOLATING** . . "Vibra-Mount" felt for machine mounting; selection, installation, examples. "How to Reduce Vibration", 16 pages. American Felt Co., Glenville & Thomas, Glenville, Conn. **IEN-01230**

**LAPPING** . . Diamond abrasive for finishing carbide dies; properties, grades, list prices. Folder, "Dymo-C", 4 pages. Elgin National Watch Co., 105-9 National St., Elgin, Ill. **IEN-01231**

**LAYOUT** . . Scale-model plant layout equipment with magnetic templates; description, examples. "Magne-Plastic", 4 pages. Magne-Plastic Corp., 77-81 N. Gratiot, Mount Clemens, Mich. **IEN-01232**

**LIGHTING** . . "Dynalite" fluorescent fixtures; illumination data, specifications, mounting. Catalog 438, 12 pages. Mitchell Mfg. Co., 73-77 E. Wacker Drive, Chicago 1, Ill. **IEN-01233**

**LIGHTING** . . Fixtures for spotlight and floodlight lamps; models, mounting methods, fittings. Bulletin 120-51, 4 pages. Steber Mfg. Co., 2702 Roosevelt Road, Broadview, Ill. **IEN-01234**

**LUBRICATING** . . Additive concentrate for water to make cutting fluid; description, examples. Booklet, "Lusol", 20 pages. F. E. Anderson Oil Co., 543 Brownstone Ave., Portland, Conn. **IEN-01235**

**MAGNETS** . . High-permeability alloys in cores, parts, assemblies on contract; examples, personnel. "Products and Services", 8 pages. Magnetics Inc., Box 308-A, Butler, Pa. **IEN-01236**

**MAGNIFYING** . . "Dynoptic Labroscope" laboratory microscope; construction, accessories. Bulletin D-185, 24 pages. Bausch & Lomb Optical Co., 626 St. Paul St., Rochester 2, N. Y. **IEN-01237**

**MANAGEMENT** . . Reasons for training foremen with notes on the company's training service. Booklet, 16 pages. Lester B. Knight & Associates, 602 W. Jackson Blvd., Chicago 6, Ill. **IEN-01238**

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RECORD TIME - COUNT QUANTITY

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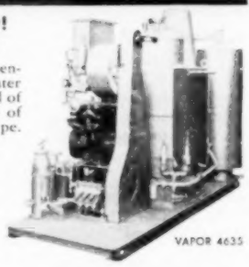

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**INDUSTRIAL WIRING, EXTENSIONS & RELOCATIONS**

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Source: ELWELL-PARKER ELECTRIC CO.
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**Special design** of the company's low-lift platform-type truck is available in 1, 2 and 3-ton ratings with electric or gasoline-electric drive. The truck is designed to handle a special load with a low center that rides in depressed position between the two portions of the split platform. Each platform section is mounted above a trailer wheel. There is no through axle so the center space between the sections is unobstructed down to the floor line. The rigid connection enables the sections to operate as a unit.

**The platform sections** measure 63 in. in length by 6¾ in. in width and provide 14 in. of center clearance. They ride 10½ in. above the floor in lowered position and can be raised to a maximum height of 15 inches.

BREVITY—Identify by IEN - 10581 if you write the maker

## PRESS TOOLS . . Plastic panel to construct sheet metal forming tools

Source: MASONITE CORP.
109-13 W. Washington St., Chicago 2, Ill.

**Can be cut and fabricated**

**The company** announces improvements in its process for manufacture of its Die Stock panels which now are available in sizes to 48 by 144-in. and in nine standard thicknesses between ¼ and 2 inches. The panel material is light in weight and sufficiently durable to be used in fabricating sheet metal, particularly aluminum, brass and copper as well as in forming thermoplastic sheet material. It is suited particularly for experimental tooling and for manufacture of experimental models. Standard width is 48 inches. Three lengths are 36, 72 and 144 inches.

BREVITY—Identify by IEN - 10582 if you write the maker

## PROTECTING . . Safety hat pads made of sponge rubber to adhere in crown

Source: E. D. BULLARD CO.
273-77 Eight St., San Francisco 3, Calif.

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**A NEATER, STRONGER, FASTER CARTON CLOSURE - EVERY TIME!**

Here's The Staple-Toothed Tiger again watching another customer save money in his shipping department with an INTERNATIONAL RETRACTABLE ANVIL STAPLE MACHINE! It Staples these *filled* cartons, *tops and bottoms* simultaneously at the unbelievable rate of 400 per hour . . . cutting shipping costs in half . . . reducing damage claims . . . and eliminating pilferage!

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● A nationally-known sausage maker safeguards the purity of his product by washing and sterilizing meat pans on a Cyclone Stainless Steel Chain Link Conveyor Belt. Much manual handling is thus eliminated . . . time and labor are saved . . . costs are lowered . . . high product-quality is maintained.

And the results in terms of time, labor and costs can be the same in your plant when you use Cyclone Metal Conveyor Belts for all processing operations. Cyclone has over 25 years of experience in fitting Conveyor Belts to varying requirements.

Write for your copy of Catalog No. 4, containing complete descriptions of Cyclone's three types of belt—Chain Link, Flat Wire and Flex-Grid. Or get in touch with the nearest Cyclone sales office.

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(American Steel & Wire Company)
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USS **CYCLONE METAL CONVEYOR BELTS**
UNITED STATES STEEL

BREVITY—Identify by IEN - 10585 if you write the maker

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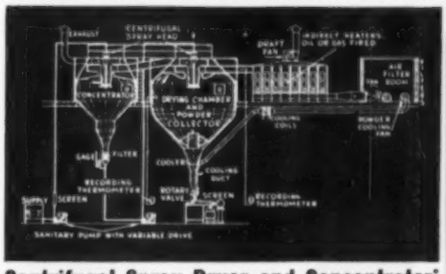


**Centrifugal Spray Dryer and Concentrator***

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- Chemicals
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- Blood or Blood Plasma
- Milk Products
- Eggs
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- Coffee and many other products

A complete spray drying plant employing a unique centrifugal type spray head. No high-pressure pump is used, and due to the design of the spray head, emulsions as well as solutions can be dried. No clogging or wearing of nozzles is caused by the suspended solids. The powder is collected and cooled in the drying chamber.

*Concentrator Available Separately*

Concentrator can be operated as separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

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DRYING & CONCENTRATING CO., 332 S. Michigan Ave., Chicago, Ill.

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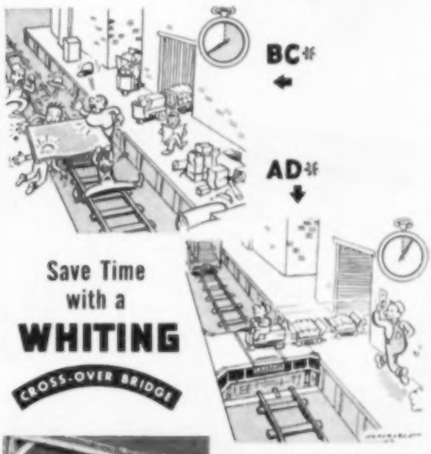


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*Before Cross-Over Bridge
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You can save time—you can save money, and you can speed up materials movement from dock-to-dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise — Ground-Level — and Roll-Away).

Write for Bulletin MS-C-400 and learn how these practical Cross-Over Bridges fit your materials-movement requirements. Whiting Corporation, Harvey, Illinois.

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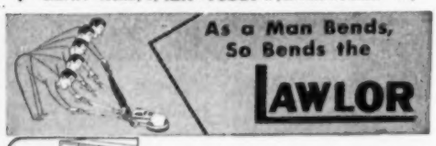

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before — around and under machines, counters, desks, lockers, etc.

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Quality Floor Equipment for 50 years
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**Solves these Problems**
with this modern equipment

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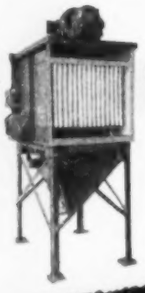

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**Pangborn**

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- ☐ Blast Cleaning Cabinets
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**METAL TREATING** . . Instructions for producing Grade I finish on steel (JAN-C-490) using company's Granodine. Form 974, 4 pages. American Chemical Paint Co., Box 301-A, Ambler, Pa. **IEN-01239**

**METALS** . . "ElectroShield' copper-clad steel sheet for electromagnetic shielding; properties data. Folder E-100, 4 pages. American Cladmetals Co., P. O. Box 544-A, Carnegie, Pa. **IEN-01240**

**METALS** . . Design-strengthened sheet; types, properties, uses. Folder CF-1, letterhead request, 8 pages. Rigidized Metals Corp., 664-P Ohio St., Dept. A, Buffalo 3, N. Y. **IEN-01241**

**METERS** . . Electric panel instruments, pyrometers, relays; models, circuits, list prices. Catalog 1-A, 36 pages. Assembly Products Inc., Bell & Main Sts., Chagrin Falls, Ohio **IEN-01242**

**METERS** . . Illustrated review on electric meters, selection suggestions. Bulletin B-4696, 28 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-01243**

**MOTOR CONTROL** . . Manual starting switches for motors to 1 hp.; design features, sizes, list prices, uses. Bulletin 606, 8 pages. Allen-Bradley Co., 1312 S. 2nd St., Milwaukee 4, Wis. **IEN-01244**

**MOTORS** . . Large squirrel-cage induction motors; chart of ratings and speed, construction data. Bulletin 05-B-7542A, 6 pages. Allis-Chalmers Mfg. Co., 900 S. 70th, Milwaukee 14, Wis. **IEN-01245**

**MOTORS** . Type-RK capacitor-start motors, ⅙ to ¾ hp.; cutaway view, features. Folder MU-94-14, 4 pages. Wagner Electric Corp., 6488 Plymouth Ave., St. Louis 14, Mo. **IEN-01246**

**OIL TREATING** . . Equipment to keep quenching oil clean continuously; application description. "Oil Quenching", 4 pages. Honan-Crane Corp., 510 Indianapolis Ave., Lebanon, Ind. **IEN-01247**

**PACKAGING** . . Single-face and flexible corrugated board for product wrapping; "ChippaKit" sample kit. Chippewa Paper Products Co., 2423-27 S. Rockwell St., Chicago 8, Ill. **IEN-01248**

**PACKAGING** . . Automatic labeling machine for containers; condensed specifications, examples. Bulletin, "Labeling Machines", 4 pages. MRM Co., 189-93 Berry St., Brooklyn 11, N. Y. **IEN-01249**

**PANELBOARDS** . . For electric light and power; breakers, models, selection. Bulletin B-5260, 20 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-01250**

**PIPE** . . How to melt snow by embedded pipes; design details, heating, costs. "Wrought Iron Pipe for Snow Melting", 40 pages. A. M. Byers Co., 1501-A Clark Bldg., Pittsburgh 22, Pa. **IEN-01251**

**PIPE HANGERS** . . Adjustable units, vibration eliminators and supports; information on internal swivel action, sizes and ratings, dimensional drawings, specifications on mounting accessories, sample problems and solutions, weight of piping materials tabulation, charts to assist in design of piping for flexibility in service. Catalog 51, available on letterhead request, 96 pages. Blaw-Knox Co., 1523-27 Pennsylvania Ave., Pittsburgh 12, Pa. **IEN-01252**

**PIPE FITTINGS** . . Ball-bearing swivel joints; data on models to 3,000 lb. and to 500 deg. F., rotary hose. Catalog 50-D, 20 pages. Chiksan Co., 328-33 Pomona Ave., Brea, Calif. **IEN-01253**

**PLASTICS** . . Nylon balls, ⅛ to ¾ in. diameter, .001 in. tolerance; properties tables. Bulletin NP-101, 2 pages. Ace Plastic Co., 91-32 Van Wyck Blvd., Jamaica 2, N. Y. **IEN-01254**

**PLASTICS** . . Cellulose-acetate and ethyl-cellulose molding powders; detail properties, uses. "Hercocel", 28 pages. Hercules Powder Co., 1940 Delaware Trust, Wilmington 99, Del. **IEN-01255**

**PRINTING** . . Splicing attachment for web-fed paperboard presses; sequence drawings. "Butt Splicer", 4 pages. Ford Instrument Co., 31-12 Thompson, Dept. I-3, Long Island City 1, N. Y. **IEN-01256**

**PROCESSING** . . Stainless and heat-resisting castings, pipe, valves; sizes, alloys. Bulletin 175, 68 pages. Electric Steel Foundry Co., 2139-43 N. W. 25th Ave., Portland 10, Ore. **IEN-01257**

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AUTOMATIC NUMBERING MACHINES
Columbia Model 150

6 WHEEL MODEL ILLUSTRATED
OTHER MODELS MADE TO ORDER

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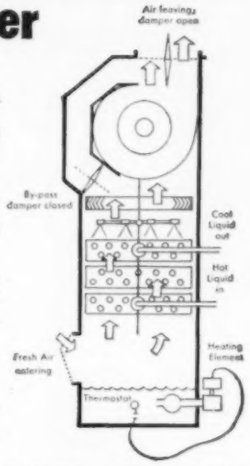


1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.

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Cooling Water

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YOU SHOULD DEMAND
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Stationary & Motion Control Sheaves

They're engineered for rugged performance from best grades of heat-treated steel and soft-gray iron castings.

You get every advantage of other sheaves **plus** these 4 outstanding features—

1. MAXIMUM PITCH DIAMETER VARIATION
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3. INTERCHANGEABLE BUSHINGS
4. USES COMMERCIAL V-BELT AND COMPANION SHEAVE

"V-Belt" Maxi-Pich Sheaves fit any factory machine—save installation and operating costs—speed production. For the FULL STORY, ask your "V-Belt" dealer, or write to the V-Belt Engineering Co., Richmond, Va.

V-BELT ENGINEERING COMPANY
RICHMOND, VIRGINIA

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- High and Low Level Cutoffs
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1964 W. ELEVEN MILE RD.
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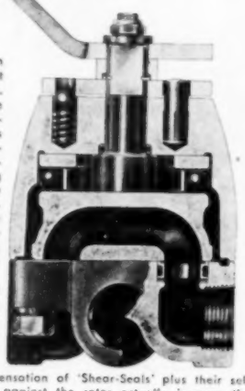
Warrick
FLOATLESS
LIQUID LEVEL CONTROLS
ELECTRODE TYPE

BREVITY—Identify by IEN - 10594 if you write the maker

## 'Shear-Seal' Valves

WEAR IN WHERE OTHERS WEAR OUT



The 'Shear-Seal' Principle is an exclusive Barksdale development for control of extreme pressures. Fluid flow is always through the center of the 'Shear-Seal'—NEVER between sealing surfaces as in conventional valve principles. Optically flat sealing surfaces of 'Shear-Seals' and porting disc (rotor) are protected by perfect contact at all times. Erosion or 'wire drawing' are not experienced even with extremely dirty high velocity fluids. The higher the pressure, the tighter the seal.

Exceptionally easy operation of Barksdale valves, regardless of pressure, is due to a balanced hydraulic load on the 'Shear-Seals' further relieved by large ball thrust bearings.

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...with STAR BLADES

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Tell your supplier you want STAR — the blades most people buy.

*Sold only through recognized distributors*

**CLEMSON BROS., Inc.**
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Makers of Hand and Power Hack Saw Blades, Frames, Metal Cutting Band Saw Blades and Clemson Lawn Mowers.

1082A

BREVITY—Identify by IEN - 10597 if you write the maker

## CALCULATING . . Electronic assembly solves mathematical problems quickly

Source: COMPUTER CORP. OF AMERICA
147 Church St., New York 7, N. Y.

**IDA** designates integro differential analyzer and nicknames this new electronic calculator. The instrument can be set up to solve qualitative and quantitative dynamic studies in chemistry, mechanical engineering, aero-dynamics, nucleonics, thermodynamics, servo-analysis and network analysis. It also solves linear differential equations with constant coefficients up to the eighth order. Eight initial conditions can be set into each problem and the problem can be worked on either a real or a modified time basis.

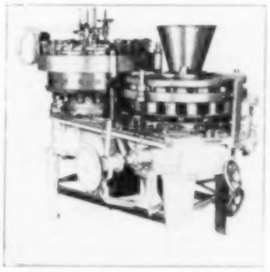
**Solutions** are recorded in graphic form on a two-channel oscillograph where computed quantities are recorded two at a time. Any computed quantity can be viewed also on an oscilloscope while it is being recorded. Each problem is set up on a plug-in board. A separate board can be employed to prepare additional problems while one is being worked on in the instrument. Overall dimensions are 21½ by 15 by 36¾ inches. Operation is on 110-volt 60-cycle ac. through a power supply that forms part of the standard equipment.

**Bulletin**, "The Electronic Slide Rule," 4 pages, describes action, illustrates component parts.

BREVITY—Identify by IEN - 10598 if you write the maker

## PACKAGING . . Automatic machine to package food products in liquids

Source: FOOD MACHINERY & CHEMICAL CORP.
51 Sprague Ave., Hoopeston, Ill.



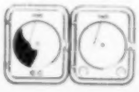
**Food products** such as beans, peas, whole-grain corn are fed to containers at 15 stations in one of two sections comprising this new automatic machine. Brine or sauce is added at a second 15-station section. The machine is a volumetric measuring unit. It is rated for can sizes from No. 211 by 300 to No. 401 by 411 and speeds from 150 to 400 cans per minute. Adjustment can be made while the machine is in operation. A feature of the construction is the banked track to prevent spillage.

**Constant level** is maintained in the inner tank of the brine section by an air-operated controller. Brine pumped to the outer tank at a slightly higher rate than is required overflows to the inner tank. The arrangement holds brine level in the tank and at the filler valves at a correct point. The machine measures 70 by 68 by 50 in. overall.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10599 if you write the maker

**John Morrell & Co.**
Hams are famous for their fine flavor. Their modern air conditioned smoke houses shown above are POWERS controlled.



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High quality standards are rigidly maintained in the above smoke houses. Accurate regulation of temperature, humidity and smoke penetration is assured by POWERS pneumatic instruments controlling diaphragm valves, dampers and static pressure regulators.

Next time you want better temperature and humidity control for any process, heating or air conditioning, contact our nearest office. There's no obligation. (a58)

**THE POWERS REGULATOR CO.**
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The Gray VoicEraser smooths out, by the scientific application of heat, the Vinylite discs used on the famous Gray Audograph.

Fullergript brush rolls are an integral part of the VoicEraser. Two Fullergript brushes scrub the discs as they run through a detergent bath. A third holds the disc from below as it passes under the heated roller and also cleans the roller between the passage of discs.

Fullergript was selected for the Gray VoicEraser because of its continuous construction and because its metal back-bone would not warp. The versatility of Fullergript may be the answer to *your* brushing problems. Just write to . . .

FULLER BRUSH — FULLERGRIPT — (At home... in business, too)

THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

BREVITY—Identify by IEN - 10601 if you write the maker

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## Turns Dust Into Profits!

**A** At Flury Foundry, this small and inexpensive Pangborn Dust Collector stops dust caused by blast cleaning operations . . . pays its own way in increased efficiency.

**B** At Dodge Cork Company, a Pangborn Dust Control System salvages $5000.00 worth of cork dust every year from some 40 sawing and polishing machines.

**C** At Landers, Frary & Clark, a Pangborn Dust Collector like this traps 522 cu. ft. of cast iron dust per day . . . company records prove maintenance costs are lower than ever before.

Dust is no problem for plants with Pangborn Dust Control. As these three cases (picked from hundreds in our files) show, a Pangborn Dust Control System *saves money* on maintenance when dust is a nuisance, saves money when dust has salvage value.

***FIND OUT TODAY***

how you can *save money* with Pangborn Dust Control. Write for your copy of Bulletin 909-A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

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**STOPS THE DUST HOG from stealing profits**

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This end threaded to class 3 fit to receive screw.
This end a double hex socket to take standard key.
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The simple way to repair stripped threads on existing work. The economical practical method for your new product design.

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MANUFACTURING COMPANY
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HOW IT WORKS — WHAT IT DOES — WHAT IT SAVES

**Study of major importance to business and industry is made available by CLARK**

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To get a copy of *"Basic Facts About Materials Handling,"* fill out the coupon, attach it to your business letterhead and mail it to the *Clark Equipment Company, Industrial Truck Division, Battle Creek, Michigan.* If you want additional copies for key personnel, they are available in reasonable quantities.

**Materials Handling Case Book; McGraw-Hill Book Co., Inc., 1951*

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## NEW LITERATURE—Continued

*"Addresses given in each review"*

**PROTECTING** . . Work gloves in jersey, canvas, fleece, leather-palm, coated types; descriptions. Catalog, "Job Rated", 8 pages. Brookville Glove Co., 851 Brook St., Brookville, Pa. **IEN-01258**

**PULVERIZING** . . Rod mills for dry or wet service; operating description, illustrated construction features, uses. Bulletin 25-C, 12 pages. Hardinge Co., 238-42 Arch St., York, Pa. **IEN-01259**

**PUNCHING** . . Machine in 118 and 235-ton ratings for channels and beams; specifications, ratings. Bulletin 712, 4 pages. Kling Bros. Engineering Works, 1302 N. Kostner St., Chicago 51, Ill. **IEN-01260**

**PUMPS** . . Reciprocating hydraulic pumps, 3 to 9 plungers, 300 to 900 hp.; performance data, construction. Bulletin 67-A, 8 pages. Aldrich Pump Co., 20 Gordon St., Allentown, Pa. **IEN-01261**

**PUMPS** . . Vertical sump pumps, 10 to 3,000 gpm., 1 to 10-in. discharge; sizes, ratings, hp. table, accessories. Bulletin 4600-A, 8 pages. Deming Co., 184-88 Broadway, Salem, Ohio **IEN-01262**

**PUMPS** . . Condensate and vacuum pumps for heating service; cut-away views, size and selection data. Bulletin 1401, 20 pages. C. A. Dunham Co., 402 W. Madison St., Chicago 6, Ill. **IEN-01263**

**PUMPS** . . Vertical turbine pumps, 6 to 30 in., capacity to 15,000 gpm.; construction details. Bulletin 7228, 8 pages. Ingersoll-Rand Co., 11 Broadway, Dept. NR, New York 4, N. Y. **IEN-01264**

**PUMPS** . . Hydraulic constant-delivery units, 3,000 and 5,000 lb.; specifications, typical circuit. Bulletin 46601, 4 pages. Oilgear Co., 1567-A W. Pierce St., Milwaukee 4, Wis. **IEN-01265**

**PUMPS** . . "Streamflow Rotex" rotary pump, 1 to 50 hp.; internal views, construction details, specifications. Bulletin WQ-50, 8 pages. Warren Steam Pump Co., 50 Warren St., Warren, Mass. **IEN-01266**

**RECORD KEEPING** . . "Record Sort" equipment applied to inventory control; description. Bulletin S-1607, 6 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-01267**

**RECORD KEEPING** . . Chart boards for visual presentation of data; standard sizes, examples. Bulletin 159-3, 4 pages. Visi-trol Corp., 21458-62 W. 8-Mile Road, Detroit 19, Mich. **IEN-01268**

**RECORDING** . . Strip-chart instrument plots function of two variables; principle. Data Sheet 10.0-5, 4 pages. Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-01269**

**RECORDING** . . "Faxfilm" sheet to reproduce product surface for photomicrographs; instructions. Folder 653, 12 pages. Brush Development Co., 3631 Perkins Ave., Cleveland 14, Ohio **IEN-01270**

**REFRIGERATING** . . Model-PT outdoor cooling tower, 3 to 100 ton; selection nomograph. Bulletin 18-PT, 4 pages. Baltimore Aircoil Co., 2521-25 Pennsylvania Ave., Baltimore 17, Md. **IEN-01271**

**REFRIGERATING** . . Unit coolers, evaporative condensers, cooling coils; performance and selection data. Catalog R-225, 52 pages. Kramer-Trenton Co., 630 Brunswick, Trenton 5, N. J. **IEN-01272**

**REFRIGERATING** . . "No-Frost" Concentrator for refrigerating equipment; picture review. Bulletin 119-A, 2 pages. Niagara Blower Co., 3317 Chrysler Bldg., New York 17, N. Y. **IEN-01273**

**REFRIGERATING** . . "Centravac" centrigufal unit, 45 to 200 ton; principle, design features, selection tables. Bulletin DS-399, 44 pages. Trane Co., 2017 Cameron Ave., La Crosse, Wis. **IEN-01274**

**ROLLING** . . Mills and accessories for sheet, strip, shapes, foil; picture review. Bulletin 40, letterhead request, 52 pages. E. W. Bliss Co., 1373-77 Raff Road S.W., Canton 10, Ohio **IEN-01275**

**ROPE** . . Manila and sisal, 3/16 to 3/4 in.; information on pre-measured marks and dispenser carton. Sheet 7565, 2 pages. New Bedford Cordage Co., Box 714-A, New Bedford, Mass. **IEN-01276**

**ROUTING** . . Machines for wood, aluminum, plastics; illustrated setups, specifications, attachments. Bulletin 1134, 12 pages. Onsrud Machine Works, 3909 Palmer St., Chicago 47, Ill. **IEN-01277**

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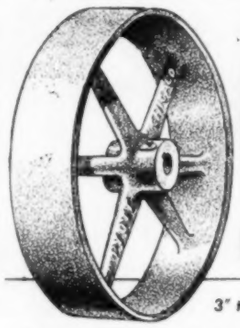

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FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

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The large shear blade shown is furnished in the above three grades for shearing any type of metal and are made to fit any machine. Send us your inquiries giving quantities and sizes.

OK ROTARY SHEARS-BLADES are designed to give maximum service — tough as they come!

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## ELEVATOR . . Portable power lift rates 750 lb., employs 6 volt battery

**Source: CLARK HOPKINS EQUIPMENT CORP. 1124-A Spring Garden St., Philadelphia 23, Pa.**

**New elevator** mounts a platform measuring 18 in. in width by 21 in. in length on a hydraulic cylinder. It employs a motor-driven power unit and pump to supply lift pressure to the cylinder. The motor is operated by a standard 6-volt vehicle storage battery. A charger for the battery is built in as a part of the standard assembly to be plugged in during off hours to keep the battery charged. There is sufficient capacity in the battery for normal operation through an 8-hr. shift. Lift capacity is 750 pounds. Lift distance is through 55 in. in 6 sec. with a rated load.

BREVITY—Identify by IEN - 10614 if you write the maker

## LIGHTING . . Reflector lamp for use in dust-filled high-bay areas

**Source: WESTINGHOUSE ELECTRIC CORP. 2-4 McArthur Ave., Bloomfield, N. J.**

**Sheds dust in high bays**

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**Recommended** installation is base up in high-bay factory areas where dust in the air tends to cloud standard lamps. Only a small amount of dust can attach itself to the bottom. Service life averages 1,500 hours. List price is $4.80.

BREVITY—Identify by IEN - 10615 if you write the maker

## HEATING . . Service water heater for washroom use, employs steam coil

**Source: T. G. McCANN CO. 13-17 W. General Robinson St., Pittsburgh 12, Pa.**

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BREVITY—Identify by IEN - 10616 if you write the maker

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***Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches***

**MODEL 3267-H-174**

Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

**$6.12** EACH in pkg. of 6 Single Units **$7.65 ea.**

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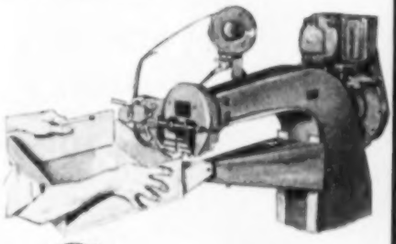
## new way of fastening almost any material to various metals



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Today there's no need to take fastening or assembly costs for granted.

In many cases you can do away with expensive rivets, screws, nails, bolts or spot welds to fasten metal either to metal or to other materials.

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## NEW LITERATURE—Continued

*"Condensed reviews for busy readers"*

**RUBBER PRODUCTS** . . Tank and pipe-lining service, rubber-coated metal parts, rubber parts; summary. Catalog, 12 pages. Automotive Rubber Co., 8903 Epworth, Detroit 4, Mich. **IEN-01278**

**SCAFFOLDS** . . "Ezebilt" steel scaffolding; details on locking basic steel panels, assembly examples. Bulletin 130, 4 pages. Universal Mfg. Corp., 851 Thomas St., Zelienople, Pa. **IEN-01279**

**SCREENING** . . Vibrating screens; selection data and specifications on models for dry and wet materials. Bulletin 2377, 20 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-01280**

**SEALING** . . Cork composition sheet, stoppers, natural cork products; properties, sizes. "Industrial Cork Products", 4 pages. Dodge Cork Co., 662-66 Manor St., Lancaster 19, Pa. **IEN-01281**

**SEALING** . . Asbestos-base plastic packings; service recommendations, types and sizes. "Plastic Packings", 4 pages. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-01282**

**SHEARING** . . Machine to trim drawn shells, also to bead, knurl, form; specifications. Folder F-25A, 4 pages. Dayton Rogers Mfg. Co., 2822-26 13th Ave. S., Minneapolis 7, Minn. **IEN-01283**

**SHIPPING** . . Insulated containers for cold-product shipment using dry ice; specifications, list prices. "Dry Ice Container", 4 pages. Can-Pro Corp., 20 Goodrich St., Fond du Lac, Wis. **IEN-01284**

**SHIPPING** . . Instructions on routing air shipments through New York. "Guide to Air Shipping", 32 pages. Port of New York Authority, 111 Eighth Ave., Rm. 1516, New York 11, N. Y. **IEN-01285**

**SIGNALING** . . Smoke alarms for coal, oil, gas-burning units; descriptions. Bulletins 107, 110, 2 pages each. General Power Plant Corp., 381 Fourth Ave., Rm. 1223, New York 16, N. Y. **IEN-01286**

**STORING** . . "Aglilene" polyethylene bottles, jars, jugs for corrosive chemicals; standard sizes. Catalog PE-2a, 4 sheets. American Agile Corp., 5804-8 Hough Ave., Cleveland 3, Ohio **IEN-01287**

**STORING** . . "Unistrut" metal framing for wrench assembly into racks, shelving, and supports for fluorescent lighting fixtures, equipment, pipe lines, electric cable; basic channel sizes, available fittings and parts, load-deflection tables, assembly drawings with notes on the parts employed, illustrated applications, ordering information. Catalog 700, 78 pages. Unistrut Products Co., 1011-15 W. Washington Blvd., Chicago 7, Ill. **IEN-01288**

**SWITCHES** . . Snap-action switches in nine basic types; condensed information on dimensions and characteristics. Bulletin 54, 4 pages. Micro Switch, 30 E. Spring St., Freeport, Ill. **IEN-01289**

**TACHOMETERS** . . "Dr. Horn" hand tachometer, 25 to 30,000 rpm. in six ranges; features. Pocket Bulletin 35-65, 6 pages. James G. Biddle Co., 1314-18 Arch St., Philadelphia 7, Pa. **IEN-01290**

**TACHOMETERS** . . Central type to measure speed of 2 to 10 machines; ranges, application suggestions. Sheet 42-R, 2 pages. Metron Instrument Co., 430-34 Lincoln St., Denver 9, Colo. **IEN-01291**

**TESTING** . . Type SR-4 electronic strain gages for industrial weighing; four examples. "SR-4 in Industry", 4 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. **IEN-01292**

**TESTING** . . "Magno-Therm" oxygen recorder; schematic circuits, operation, components, charts. Bulletin 51-829, 16 pages. Hays Corp., 740-44 E. 8th St., Michigan City, Ind. **IEN-01293**

**TESTING** . . Model BG-1 beta-ray gage for thickness of moving sheet; schematic, operation. Bulletin BG-1, 4 pages. Industrial Nucleonics Corp., 1203-7 Chesapeake, Columbus 12, Ohio **IEN-01294**

**TESTING** . . New equipment for laboratory use; condensed catalog information. "What's New No. 13", 16 pages. Scientific Glass Apparatus Co., 120 Lakewood Terrace, Bloomfield, N. J. **IEN-01295**

**TESTING** . . "Spinlab" megohm bridge for high resistances; detail description, schematic. "Model 144", 2 pages. Special Instruments Laboratory, 1001-5 Highland, Knoxville 16, Tenn. **IEN-01296**

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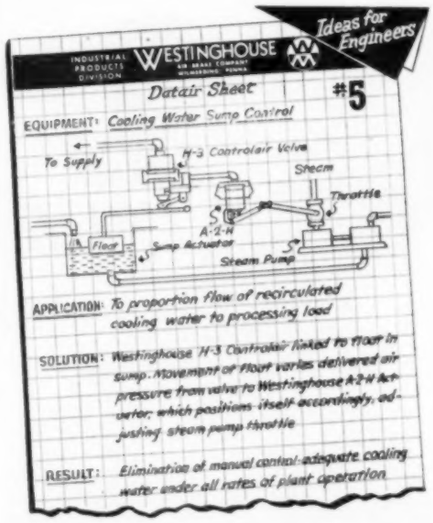


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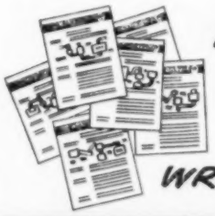

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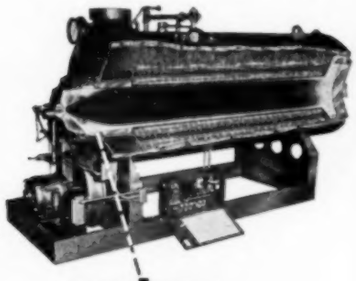

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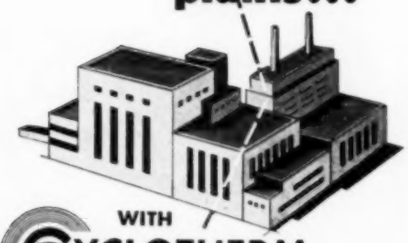

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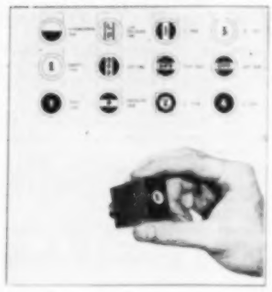


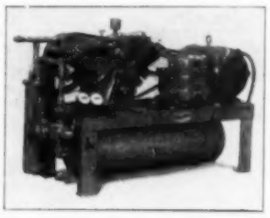
**Brass housing** measuring about 2 by ⅞ by 1¾ in. encloses a pivot-mounted spring-centered indicator wheel and two solenoids. The wheel is positioned back of a ½-in. window opening fitted with optically-clear cover glass. One solenoid provides rotation clock-wise from center position. The other solenoid operates for counter clock-wise movement. These two extremes plus the open circuit spring centered position provide three indications. The housing is filled with inert gas and is hermetically sealed. It carries a connection fitting at the rear end for operation in a 28-volt circuit. It can be supplied also to specification for 12-volt supply.

**The initial design** was developed to indicate landing-gear position in an aircraft and to report level of de-icing fluid as well as cabin air pressure. The unit is offered now for industrial use in liquid-level signaling, pressure signaling, contact conditions or any variable that can be connected electrically to actuate the two solenoids.

BREVITY—Identify by IEN - 10631 if you write the maker

## COMPRESSOR . . Handles and reclaims liquid petroleum gas in cars, storage

Source: BRUNNER MFG. CO.
Broad & Utica Sts., Utica 1, N. Y.



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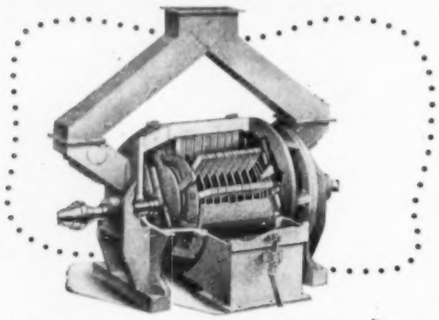

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**TIME STUDY** . . Description on "Methods-Time Measurement" method of applying standard time values. Booklet, 8 pages. Methods Engineering Council, 716-20 Wallace, Pittsburgh 21, Pa. **IEN-01298**

**TRANSFORMERS** . . Dry-type three-phase units, 9 to 225 kva.; condensed data in tabular form, wiring diagrams. Bulletin AC-186, 4 pages. Acme Electric Co., 26 Water St., Cuba, N. Y. **IEN-01299**

**TRANSFORMERS** . . Ignition units for domestic oil and gas burners; illustrated construction details. Bulletin GEA-5599, 8 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-01300**

**TRAPS** . . Thermostatic steam traps; selection, ratings, recommended connections, list prices, others. Catalog 751, 32 pages. W. H. Nicholson & Co., 10-14 Oregon, Wilkes-Barre, Pa. **IEN-01301**

**TRUCKS** . . Type-FC fork lift trucks, 3,000 to 6,000 lb.; specifications, attachments. Bulletin 1326-A, 8 pages. Baker Industrial Truck, 1248-52 W. 80th, Cleveland 2, Ohio **IEN-01302**

**TRUCKS** . . Hand hydraulic lift trucks for pallets; models, diagrams on palletized carloading. Bulletin 5142, 16 pages. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill. **IEN-01303**

**TUBES** . . Seamless or welded steel, for process use; properties of carbon, alloy, stainless. Bulletin TA-1559, 8 pages. Babcock & Wilcox Tube Co., 4027-31 Fourth Ave., Beaver Falls, Pa. **IEN-01304**

**TUBES** . . Bent and fabricated tubular parts; illustrated facilities, examples of aircraft work. Bulletin 516, 8 pages. Tube Bends Inc., 204-8 Newington Ave., New Britain, Conn. **IEN-01305**

**VALVES** . . And pipe fittings for ammonia and Freon lines; design points, types, sizes, list prices, dimensions. Catalog O, 40 pages. Frick Co., 320 Broadway, Waynesboro, Pa. **IEN-01306**

**VALVES** . . "Micro-Cam" graduated valve to adjust oil flow to a burner; description, capacity chart. Catalog 704-A, 4 pages. Hauck Mfg. Co., 126-34 Tenth St., Brooklyn 15, N. Y. **IEN-1307**

**VALVES** . . Blow-off valves to 400 lb.; construction details, models, list prices. Bulletin B-425 (1951), 24 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. **IEN-01308**

**VIBRATING** . . Pulsating pneumatic panels for bin or hopper interiors; description, diagram of operation. "PneuBin", 4 pages. Gerotor May Corp., P. O. Box 86-A, Baltimore 3, Md. **IEN-01309**

**WATER TREATING** . . Ion-exchange demineralizers; principle, performance data. Bulletin 200, 4 pages. Industrial Filter & Pump Mfg. Co., 5902 Ogden Ave., Chicago 50, Ill. **IEN-01310**

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**WELDING** . . Electrode holders, cable connectors, terminals; illustrated details. Bulletin 101, 4 pages. Cam-Lok Div., Empire Products, P. O. Box 98 (C-20), Cincinnati 36, Ohio **IEN-01312**

**WELDING** . . "Tweener-Weld" small resistance welders; transformer and capacitor-discharge examples. Bulletin 253, 8 sheets. Federal Tool Eng., 530-34 Mulberry, Newark 5, N. J. **IEN-01313**

**WINCHES** . . Electric car pullers; data on capstan, drum and continuous-rope types to 15 ton. Catalog 100-H-66, 8 pages. American Hoist & Derrick Co., 61 S. Robert St., St. Paul 1, Minn. **IEN-01314**

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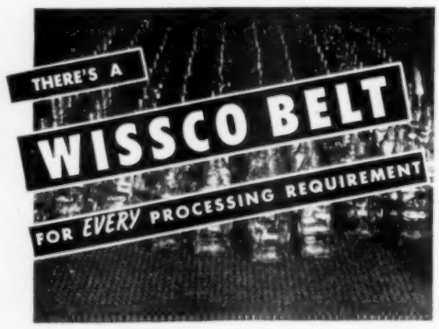


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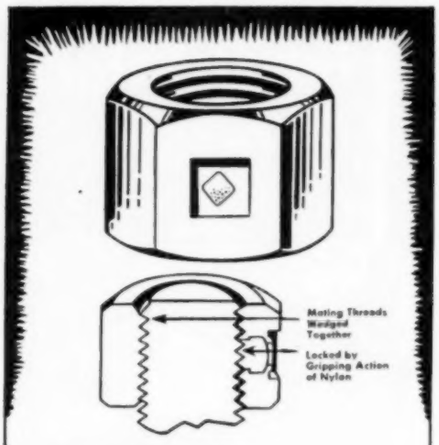


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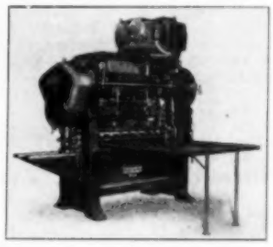
**Source: E. W. BLISS CO.**
**1373-77 Raff Rd. S. W., Canton 10, Ohio**



**Speed range** is 100 to 200 spm. by adjusting the variable-speed drive on this new 150-ton press. It is known as No. 8150. The press will take a sheet to 54 in. in width and can be set up to punch slots, rounds, ovals, with straight or alternating staggered rows. **The staggered pattern** is accomplished by feeding the sheet straight through the press and by moving the punch and die from side to side through an adjustable stroke.

**A counter** can be set to stop the action automatically after a predetermined number of rows have been punched. A safety device stops the feed before the tail of the sheet reaches the punching line. This leaves a predetermined margin between the last row of holes and the sheet edge.

**Feed** to the press is by means of rolls in connection with a releasing mechanism on the upper gripping unit. The rolls can be slid to a support bracket extending to the sides of the press to clear the space for installation of die sets from the front or back. A die also can be inserted from the side.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10648 if you write the maker

**with DUNHAM**
**CONDENSATION PUMPS**

Dunham Condensate Pumps with side-mounted motors require little floor space, are low in first cost and inexpensive to maintain.

Rapid return of hot condensate to boilers saves fuel, saves makeup water . . . minimizes difficulties from boiler incrustation and system corrosion.

Dunham Pumps are easy to install without bars or bed plates. Completely wired, they're ready for operation when piping is connected. For full information, WRITE FOR BULLETIN 1401-11.

**DUNHAM**
C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
*In Canada:*
C. A. Dunham Co., Ltd., Toronto
*In England:*
C. A. Dunham Co., Ltd., London

*HEATING SYSTEMS AND EQUIPMENT*

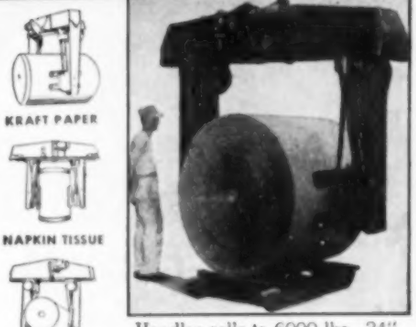
BREVITY—Identify by IEN - 10649 if you write the maker

# SPACEMASTER new "61"

**LEWIS-SHEPARD** The MASTER Line
LEWIS-SHEPARD PRODUCTS INC., 102 WALNUT ST., WATERTOWN, 72, MASS.
National Plant CRAWFORDSVILLE, INDIANA

BREVITY—Identify by IEN - 10650 if you write the maker

## THIS 6000 LB. GRAB is Revolutionizing Roll Handling



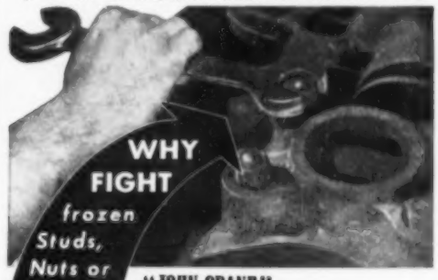

Handles rolls to 6000 lbs., 24" to 60" diameter, 72' long. All motions motorized and controlled from crane cab. Turns rolls from vertical to horizontal. Handles various materials without damage.

WRITE FOR BOOKLET 2012 GIVES DETAILS

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4205 East 285th Street, Wickliffe, Ohio

**CLEVELAND TRAMRAIL**

BREVITY—Identify by IEN - 10651 if you write the maker




**"JOHN CRANE" PLASTIC LEAD SEAL®**
**stops leaks.... prevents thread seizure**

Why use a red or white lead pipe dope on your threads, when Underwriters' Approved non-hardening Plastic Lead Seal will do the job so much better?

It costs no more to use the best. The original application is no more expensive — yet it means that you can forget leakage worries...that you will never be faced with breaking a frozen connection, stud, bolt, or nut!

***Make your first Plastic Lead Seal application now. Write us— we'll send a free sample.***

JOHN CRANE CRANE PACKING COMPANY
1415 CUYLER AVENUE • CHICAGO 13, ILL.

BREVITY—Identify by IEN - 10652 if you write the maker

*Fast... Sure... Time Saving Way*

## TO SEAL WELD SEAMS!

**VERSATAL "POWER RAM"**

**Air Operated Follower Plate Pump**

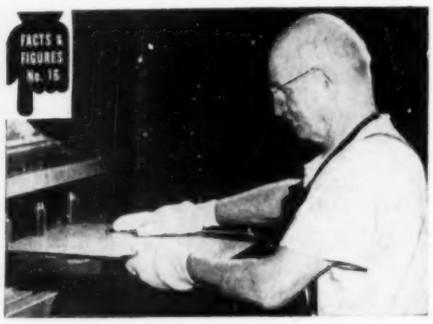
- Completely empties and cleans the sides of a 55-gallon drum.
- Stops contamination — does not allow air to reach the material.
- Prevents material from drying out or "skinning over."
- Saves important money on barrel cleaning.
- 5836 lbs. atmospheric pressure on the materials, assures safe, positive prime.

**Free — write now** for literature giving full data. Address Alemite, Dept. B-101, 1830 Diversey Pkwy., Chicago 14, Ill.

A PRODUCT OF SW SERVICE

ALEMITE Versatal SPRAY PUMP EQUIPMENT

BREVITY—Identify by IEN - 10653 if you write the maker




## JOMAC GLOVES

**outlast 9 pairs of "monkey face" gloves in die-casting plant**

A die-casting plant* had been using up "monkey face" gloves at the rate of three pairs per man per day. They switched to Jomac Work Gloves and found Jomacs lasted three days, nine times as long as the old-style gloves. *Name on request.

Jomacs are

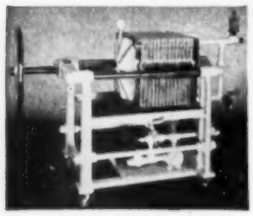
Washable • Reversible • Flexible • Heat-resistant

Protect against heat, cold, rough and sharp edges

## C. WALKER JONES CO.

**6135 N. Lambert Street, Philadelphia 38, Pa.**

BREVITY—Identify by IEN - 10654 if you write the maker



ERTEL ASBESTOS DISK

## UTILITY FILTER

*for coarse prefiltration to germproof filtration*

**USES ERTEL ASBESTOS FILTER SHEETS FILTER PAPER • FILTER CLOTH FILTER CLOTH AND FILTER AID**

★ EU Model Ertel Utility Filter is available in a number of sizes holding from 10 to 100 16"x16" filtering surfaces.

One of its most important features is the absence of rubber washers or gaskets. The filter medium forms a perfect seal around the edges of the filter frames and prevents loss of liquid. The standard Ertel single handwheel effects a simple complete closure. Can be furnished with or without pump, motor and complete pressure control.

*ERTEL SERVICE: We invite you to make use of our consultation service. Our engineering staff is always available to help on solving your Liquid Handling problems.*

**ERTEL ENGINEERING CORPORATION**

KINGSTON NEW YORK

Representatives in Principal Cities

MANUFACTURERS OF HIGH GRADE ERTEL ASBESTOS FILTER SHEETS
ASBESTOS SHEET FILTERS • CYLINDER TYPE DISC FILTERS
PYROGEN FILTERS • VACUUM BOTTLE FILLERS • MIXERS • CAPPERS
CENTRIFUGAL AND SELF-PRIMING STAINLESS STEEL PUMPS

BREVITY—Identify by IEN - 10655 if you write the maker

## TRUCK . . Two wheel aluminum unit, replaceable parts, rates 500 pounds

**Source:** W & E SALES CO.
317-21 E. 4th St., Los Angeles 13, Calif.

**Harvick No. 500** is a new hand truck employing a 2-in. tubular aluminum frame, cast-aluminum cross bars and foot and a pair of aluminum brackets that can be opened or closed to assist in handling a load. Overall dimensions are 22 in. in width by 46 in. in height. The foot measures 6½ in. front to back.

**The wheels** are cast aluminum with molded rubber tires, permanently assembled. Mounting is on roller bearings, factory lubricated. Wheel dimensions are 8 by 1⅝ inches. The truck weighs 25 lb. and features quickly replaceable parts.

BREVITY—Identify by IEN - 10656 if you write the maker

## METAL TREATING . . Powder material forms phosphate paint base on steel

**Source:** OCTAGON PROCESS INC.
22 Bank St., Staten Island 1, N. Y.

**Dip interval ½ to 5 min.**

**Anchorite 100** is a new powder material employed in solution in water for immersion or spray application on steel surfaces. It forms an inert phosphate-compound film that is highly resistant to corrosion and provides an excellent base for organic coating. Application can be made also on galvanized iron, cadmium, zinc to improve adhesion of organic coatings to these surfaces. While the treatment is intended primarily to form a base for paint it also acts as a corrosion-resistant protection for considerable time intervals.

**The company** is prepared to supply practical assistance in application of the material and installation of the required equipment. The material itself meets specifications for a Class C finish in U. S. Army Specification No. 57-0-2C and in armed services specification JAN-C-490 Grade 1.

BREVITY—Identify by IEN - 10657 if you write the maker

## THREADING . . Re-chasing die for battered threads, ¼ to ¾ in.

**Source:** BONNEY FORGE & TOOL WORKS
721 Meadow St., Allentown, Pa.

**Hexagon outline** of this new re-chasing die suits it for application in a wrench to re-chase battered or damaged threads on a bolt or stud. Sizes range from ¼ in. 28 threads to ¾ in. 16 threads per inch. Designation is Thread Restorer Set TR7.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10658 if you write the maker

## *saving 60% of nut-running time*

The packing nuts of this condenser are run to *uniform tightness* with a CP-3440 REVERSIBLE AIR IMPACT WRENCH—in about 40% of the time required when a T hand wrench was used. Operator fatigue is eliminated. Less than six inches long, the CP-3440 works where longer tools cannot be used and weighs but 4½ pounds. Its controllable power feature assures uniform nut tightness on production line work. Write for copy of Bulletin 812.

**CHICAGO PNEUMATIC TOOL COMPANY**

General Offices: 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 10659 if you write the maker

## SPEEDY ROTOR CHIPPERS "PAID OFF" in 29 days

**JOB:** Cleaning off excess metal from base castings. Were using 14¼-lb. hammers—slow and hard to control.

**SOLUTION:** Rotor Application Engineer recommended new Rotor Chippers. Weigh only 11½ lbs. Easy to maneuver. High speed. Lots of wallop.

**RESULTS:** Cut rejects. More output "paid off" new Rotor Chippers in 29 days.

Call us for a survey in your plant. *Ask for Catalogue No. 37.* AIR O'TOOL

**ROTOR CHIPPER FACTS**

**LIGHTER** . . . 1½ to 3 lbs. lighter.

**SHORTER** . . . 1" to 2" shorter.

**MATCH YOUR JOB** . . . Each basic model can be adapted to three kinds of work

**THE ROTOR TOOL CO.**
CLEVELAND, OHIO

BREVITY—Identify by IEN - 10660 if you write the maker

## Protect As You Project *Delicate Precision Parts*

## PACKAGE in *Clearsite* Plastic Selling Containers

Drills and tools, industrial jewels, taps and dies, screws, springs, nozzles, valves, fine machine parts, fishing tackle, electrical parts, and many, many others can be packaged for perfect visibility and the utmost in protection in the container that's featherlight (¼ the weight of glass) • shatterproof • flexible or rigid • permanently printed • clear or opaque in all colors • eventually a re-use container.

***Write for your FREE copy of the new, fully illustrated brochure that points up the many uses and advantages of Clearsite Plastic SELLING Containers.***

Clearsite is made only by

**CELLUPLASTIC CORPORATION**

32 Avenue L • Newark 5, New Jersey

Milwaukee • Los Angeles • Detroit • New Haven
Cleveland • Denver • Minneapolis • Cincinnati
Atlanta • Houston • Chicago • Jacksonville
Ft. Worth • St. Louis • San Francisco • Jackson
Richmond • Montreal • Toronto

AMERICA'S #1 SOURCE FOR PLASTIC CONTAINERS
ESTABLISHED 1919

BREVITY—Identify by IEN - 10662 if you write the maker

BURT F.E.F. VENTILATOR

## FOR RAPID REMOVAL OF SMOKE, FUMES, HEAT, ETC.

The Burt Free Exhaust Fan Ventilator is an important new development for rapid localized air removal. Its airshaft provides higher capacities due to its absolute free opening. Its aerodynamically designed fan is engineered solely for high volume air removal with efficiency and economy. 7 sizes and 17 motors provide capacities from 5000 C.F.M. to 75,550 C.F.M. Complete data in Sweet's or write for Bulletin S.P.V. 18.

FAN & GRAVITY VENTILATORS - LOUVERS - SHEET METAL SPECIALTIES

**The Burt Manufacturing Company**

909 So. High Street • Akron 11, Ohio

BREVITY—Identify by IEN - 10663 if you write the maker

## What's U. S. Rubber doing for electrical design?

**Transformer handle of Enrup** for a large manufacturer of electrical equipment. Enrup was selected because its electrical properties can be maintained under very adverse conditions, and because it has great toughness, impact strength, and resistance to other solvents.

The horizons of electrical design are being widened by U.S. Rubber's new thermosetting plastic, Enrup. The transformer handle shown here has greater strength and electrical properties because it is made of Enrup.

This remarkably versatile substance can be punched, sanded, sawed, nailed, bolted, molded or machined. Enrup can be made into almost any shape or form, simple or complex. It may be exactly what you have been looking for to make your product stronger, more efficient, less expensive.

Enrup is fabricated and molded entirely by U.S. Rubber engineers. They will gladly discuss your particular problems. Write to address below.

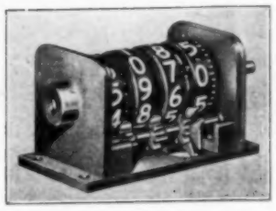
PRODUCT OF U.S. RUBBER SERVING THROUGH SCIENCE

**UNITED STATES RUBBER COMPANY**
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

BREVITY—Identify by IEN - 10665 if you write the maker

## COUNTING . . Wheel type assembly, reads to 15,000 counts per minute

Source: VEEDER-ROOT INC.
18-22 Sargeant St., Hartford 2, Conn.



**The drive shaft** connecting into this new Series-1370 counter is rated for normal operation at 1,500 rpm. It is connected into the first wheel of the counting assembly to provide 10 counts for one revolution of this first wheel for counting action at the rate of 15,000 units per minute. The mechanism employs a Geneva transfer to make the high-speed operation practical.

**Assemblies** are available to a maximum of 10 wheels. The four-wheel unit shown in the illustration measures about 3¼ by 1½ by 1⅝ in. overall. It is suited particularly as a built-in component of equipment in which a counter is desired.

BREVITY—Identify by IEN - 10666 if you write the maker

## INSULATING . . Asbestos sheet, silicone treated for electrical use

Source: JOHNS-MANVILLE SALES CORP.
22 E. 40th St., Room 1201, New York 16, N. Y.

**For interlaying and wire wrapping**

**Quinterra Type 3** is a Class-H insulating material, as designated by AIEE Standards for service temperatures to 180 deg. C. The base sheet of asbestos is an inorganic closed structure without holes. It is uniform in texture and thickness after it has been treated with silicone. It is flexible for handling during application and is resistant to cracking or crazing.

**Available** forms include sheet, rolls and tape with widths ranging from ¼ to 36 in. and thickness from 3 to 9 mils. The sheet can be factory cut to specification for width and length. Dielectric strength is minimum at 350 vpm. under continuous exposure to maximum temperature of 180 deg. C. This strength remains constant under continuous high humidity.

BREVITY—Identify by IEN - 10667 if you write the maker

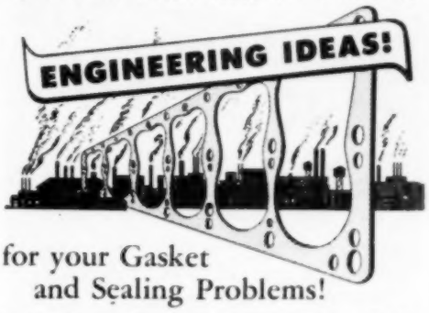
## FASTENINGS . . Plastic cylinder anchors screw in masonry, wood

Source: MASTERCRAFT PRODUCTS
95-03 150th St., Dept. IEN, Jamaica 4, N. Y.

**Scru-Tite** trade names a new Tenite plastic anchor to drive into a drilled hole in a range of structural materials. The star-shaped cylinder then secures a fastening threaded into it. Ten sizes apply in 11/64 to 9/16-in. holes. They measure ⅝ to 2¼ in. in length. List price is $1.20 to $12 per hundred.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10668 if you write the maker




## for your Gasket and Sealing Problems!

Looking for new ideas on gasketing or sealing? Let Fel-Pro Engineers help you solve these problems. For over 30 years Fel-Pro has designed and developed sealing materials, gaskets, etc. for industry. This experience can be put to work for you. Send us details and specifications on any of your specific requirements for our cost-cutting, product-improving ideas and recommendations. Write: FELT PRODUCTS MFG. CO., 1523 Carroll Avenue, Chicago 7, Ill.

526NED

**FEL-PRO** Utilize Newest Materials ENGINEERED Specifically designed for your product! **gaskets**

BREVITY—Identify by IEN - 10669 if you write the maker

## FOILED AGAIN!

Those three little villains — Dust, Dirt, and Grit — are *foiled* every *time* they match their wits against a CLEMENTS-CADILLAC blower-suction cleaner. It blasts them out of every nook and cranny of your machinery and equipment — quickly, easily, and economically.

Eligible under C.M.P. regulations.

SAVE TIME • MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

**CLEMENTS MFG. CO.**
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 10670 if you write the maker

## BITUCOTE Ready Patch

READY PATCH is the perfect ready-mixed floor patch for fast, easy repairs of ruts, holes, and dangerous cracks in industrial floors.

READY TO USE — No mixing or extras to add.

PERMANENT—Won't crack, chip, or corrugate under heaviest traffic.

NO WAITING TIME — Traffic can roll as soon as hole is repaired.

$90.00 per 55 gal. drum
$55.00 per 30 gal. drum
Including Primer
F.O.B. St. Louis

Send for Free Bulletin "STOP FLOOR HAZARD"

**Bitucote PRODUCTS**
Division of BRIDGES PAVING CO.

1411 CENTRAL INDUSTRIAL DRIVE • ST. LOUIS 10, MO.

BREVITY—Identify by IEN - 10671 if you write the maker

## buell KNOWS DUST RECOVERY

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall – continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Dept. 22-J, 70 Pine St., New York 5, N. Y.

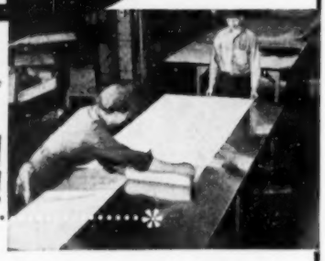
**buell**

*Engineered Efficiency in* **Dust Recovery**

BREVITY—Identify by IEN - 10672 if you write the maker


**Mystik Protecto-Mask**

SAVE that polished surface!



Here's sure protection for those expensive, highly polished surfaces—stainless steel, aluminum, plastics, many more!

• Keep them protected during *fabrication, storage, in shipment.* • MYSTIK Protecto-Mask is *Self-Stik* . . . goes on easily from the roll to surface, peels off easily. Leaves no residue. • Protects against scratches, and production damage . . . cushions blows . . . shields against splatter from welding arc. Can be used for layout and diagramming.

*Ask your supplier or write for full information and sample. Mystik Adhesive Products, 2644 N. Kildare, Chicago 39.*


BREVITY—Identify by IEN - 10673 if you write the maker


**For Precision Heat Treating—**

**HUPPERT Series 869 LABORATORY FURNACE**

*Model 869-ACB*
**$480.00**
*with electronic controller and Infitrol*

The Huppert 869-ACB laboratory furnace gives the operator automatically controlled temperatures from 300° F. to 2200° F. through one electronic controller and one Huppert Infitrol—no other control equipment needed. This wide temperature range makes the furnace ideal for *both hardening and tempering operations.* Counter-weighted door is easy to operate; multi-insulation principle assures full heat retention; and heating elements are from Kanthal high temperature alloy. I.D.—8" wide, 6" high, 9" deep plus 3" throat. Furnace is completely wired for operation.

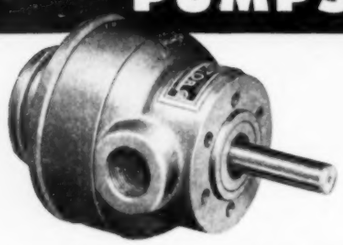
**Other Model Capacities**

| Model No. | Description | Temp. Range | I.D. | Wattage | Price |
|---|---|---|---|---|---|
| 869-BM | Bench Model with Pyrometer | 1000°-2200° F. | 8"x6"x9" | 4000 | $280.00 |
| 869-FM | Floor Model with Electronic Controller & Infitrol | 300°-2200° F. | 8"x6"x9" | 4000 | $530.00 |

**K. H. HUPPERT CO.**
6856 Cottage Grove Avenue Chicago 37, Illinois
*Manufacturers of Electric Furnaces and Ovens*


BREVITY—Identify by IEN - 10674 if you write the maker


**GEROTOR hydraulic PUMPS**



**for high volumetric and mechanical efficiency**

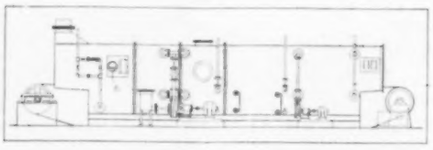
Exclusive GEROTOR elements revolve in the same direction at low relative speed, resulting in less wear, longer life. Continuous fluid-tight tooth engagement means less slippage, more uniform flow. Pressures up to 1000 p.s.i., continuous duty; in some sizes, up to 1200 p.s.i. continuous, 1500 intermittent. Plain, base or flange mounting. Write for catalog.

GEROTOR hydraulic pumps & motors
GEROTOR MAY CORPORATION, Baltimore 3, Md.


BREVITY—Identify by IEN - 10675 if you write the maker

## CLEANING . . Spray pickling machine to process steel cartridge cases

Source: B. F. GOODRICH CO.
448-52 S. Main St., Akron 11, Ohio



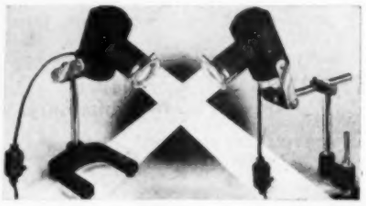
**New design** of the company's Goodrich-Curran automatic spray pickling machine takes steel cartridge cases from an annealing furnace. It carries them through a series of compartments on a multi-strand rubber-covered stainless-steel cable conveyor to remove the annealing scale and, if desired, to prepare the cases for lacquer finishing. A typical machine includes a vestibule, an acid pickle operating at 170 deg. F., a recirculating rinse operating at 120 deg. F., and a fresh-water rinse prior to delivery. Such a machine employs a conveyor measuring 6 ft. in width and measures overall 12 ft. in width by 35 ft. in length by 7 ft. in height. Maximum vertical clearance for the work is 30 inches.

**The pickling acid** and other solutions are sprayed from above and below the conveyor by recirculating pumps. The bottom of each compartment serves as a reservoir for its solution. The high-pressure spray provides mechanical as well as chemical action for scale removal. When the pickling and rinsing unit is used, without further preparation for lacquering, the user can remove the basket of cartridge cases or process pieces from the conveyor and continue them through further processing as required. In cases where lacquer is to be applied, a smaller unit is supplied to perform the necessary operations. Production for the pickling and rinsing assembly is 2,500 units per hour.

BREVITY—Identify by IEN - 10676 if you write the maker

## LIGHTING . . Adjustable fixture focuses ⅝ to 3 in. spot on a surface

Source: LINDLY & CO.
78-82 Herricks Road, Mineola, N. Y.



**Bright-Beam** is a new adjustable incandescent light fixture with universal stand, or clamp mounting, to illuminate a surface for layout, inspection and for operations such as profile grinding and milling, engraving, sharpening, small parts assembly. The fixture includes an adjustable two-lens condenser and reflector with an adjusting tube that is moved axially to vary the light spot between ⅝ and 3 in. in diameter.

**Standard assembly** is on a cast-iron base equipped with rubber feet. A universal clamp can be specified in place of the base. List price is $27.50 for the fixture and stand. The universal clamp with extension rod adds $4.80.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10677 if you write the maker


**New-REMINGTON STUD DRIVER**
MODEL 450

**Cartridge-powered tool fastens steel or wood to concrete or steel in seconds!**

Sets studs as fast as 5 min.—up to 100 times faster than usual methods for hanging steel sash to concrete, setting steel or wood structurals on concrete, attaching conduit and boxes to masonry and steel surfaces, etc.

Just 12 seconds to load and fire! Safety shield, cocking indicator, safety button make it *extra*-safe. Sets wide variety of studs—5 selective power loads.

No wires or outside power source. Weighs 5½ lbs. Rugged, dependable, stands hard handling and use. Costs only $119.50. Write today for more details, name of nearest distributor. Remington Arms Company, Inc., Industrial Tool Division, 931 Barnum Avenue, Bridgeport 2, Connecticut.

Remington DU PONT


BREVITY—Identify by IEN - 10678 if you write the maker


**cut servicing costs**

**The NEW RITE TOOL**

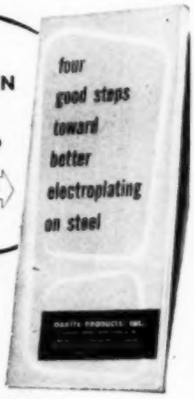
The New Rite Tool trues commutators quickly and accurately in your own shop or on the service call.
NOT DEPENDENT on mechanical power.
UNEXCELLED for the fast reconditioning of small armatures of electrical devices and appliances from toys to vacuum cleaners.
UNSURPASSED for the economical turning and undercutting of AUTOMOTIVE GENERATORS and STARTERS.
Will accommodate shafts from .156 to .787 thousandths in diameter. by use of collets.

**MODEL B RITE TOOL**
**$41.25** F.O.B. Fall River
Three collets included
Model with undercutter $2.50 extra

*Manufactured by*
For details write . . . **RITE TOOL CO., INC.**
FALL RIVER, MASSACHUSETTS, U. S. A.


BREVITY—Identify by IEN - 10679 if you write the maker


HAVE YOU TAKEN THE FOUR GOOD STEPS?
*See page 6*




**This FREE New Booklet Tells You How**

In its 28 illustrated pages you'll find the answers to many questions that affect the success of your electroplating on steel. You'll want to read more about:

¶ Which costs more: good electrocleaning or poor electrocleaning? *See page 4.*

¶ How can cleaning costs be reduced 33% while plating quality is being improved? *See pages 7 and 8.*

¶ What are four easy ways to improve the average rinse tank? *See page 10.*

¶ What rinsing fault is "an invitation to trouble" in the plating of high-carbon steel? *See page 11.*

¶ Why is it better to clean steel with reverse current than with direct current? *See pages 12 to 14.*

¶ What causes hydrogen embrittlement during electrocleaning? What is the remedy? *See pages 15 and 16.*

¶ One part chromic acid in 1,000,000 parts of cleaning solution—does that spell D-A-N-G-E-R? *See page 16.*

¶ How can an ordinary electrocleaning cycle be transformed into an exceptionally good cycle? *See Cycle E on page 23.*

**FREE** For a copy of "*Four good steps toward better electroplating on steel*", write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
**OAKITE**
MATERIALS • METHODS • SERVICE
*Technical Service Representatives in Principal Cities of U. S. & Canada*

BREVITY—Identify by IEN - 10681 if you write the maker

# TAP-LOK INSERTS

**save Man-hours and Customers**

STRIPPED threads kill customer goodwill. To prevent tapped thread failure in light metals, plastics, wood and similar materials, sound engineering calls for a hard bushing to increase the shear area. Among the various types, TAP-LOK INSERTS have important advantages:

U.S. Patent 2,455,081

(1) Self-tapping, they save many man-hours in assembly.

(2) They hold position rigidly.

(3) Cost is relatively low.

The TAP-LOK INSERT is quickly installed with a simple driving tool into a cored or drilled hole equal in size to a tap drill hole for the external thread of the Insert. It cuts its own thread, saving a tapping operation. It remains secure because the torque necessary to dislodge it is greater than the torque a standard machine screw can withstand.

Send for samples and descriptive folder.

•

Also manufacturers of Groov-Pins—for positive locking press fit.

**GROOV-PIN CORPORATION**

1127 HENDRICKS CAUSEWAY, RIDGEFIELD, N. J.

BREVITY—Identify by IEN - 10682 if you write the maker

# MERCOID

AUTOMATIC CONTROLS FOR INDUSTRIAL APPLICATIONS REQUIRING POSITIVE CONTROL OF PRESSURE, TEMPERATURE, LIQUID LEVEL ETC.

NOTE THE FEATURES

**MERCURY SWITCH**

Hermetically sealed mercury switch is used. They cannot be affected by dust, dirt or corrosion nor are they subject to open arcing, oxidation, pitting or sticking of contacts, all common causes of contact trouble. This switch will give better control service and longer control life.

**BOURDON TUBE**

(Middle back of cover)

The Bourdon tube is the actuating element of the control. It is the oldest known, tried and proven element, having been used in gauges for many years.

**OUTSIDE ADJUSTMENT**

The outside double adjustment with the calibrated dial and pointers is a convenient feature, making it very easy to set the required operating range, plainly visible on the dial. All guesswork is eliminated.

**GLASS FACE**

The glass face on the cover permits seeing the entire operation of the control in plain view. One can always tell whether the switch circuit is open or closed, a great convenience whenever servicing becomes necessary.

WRITE FOR CATALOG 700 — MENTION THIS PUBLICATION PLEASE

THE MERCOID CORPORATION 4201 BELMONT AVE. CHICAGO 41, ILL.

BREVITY—Identify by IEN - 10683 if you write the maker

# MAXIM SNOW THROWERS

Maxim self-propelled rotary snow throwers can increase your snow removal efficiency. Customers report savings well beyond cost of machine, in some cases after only 2 weeks of operation.

The Maxim Snow Thrower is self-propelled, throws the snow 40 feet away in any direction, no built-up banks, handles wet or dry snow. NOW USED IN 32 OF THE 48 STATES. Send for details and address of your nearest dealer.

SEND THIS COUPON FOR DETAILED INFORMATION

**THE MAXIM SILENCER COMPANY**
71 Homestead Ave., Hartford 1, Connecticut

Name _____

Address _____

BREVITY—Identify by IEN - 10684 if you write the maker

## SANDING . . Tilting spindle machine applies on metal, plastics, wood

**Source: KINDT-COLLINS CO.**
**12657 Elmwood Ave., Cleveland 11, Ohio**

**Oscillating** or steady rotation at 2,000 or 4,000 rpm. is available at the tilting spindle in this new machine. Tilt angle can be set at any point to 45 deg. by operating a worm and gear. Tilted position can be locked. The spindle is driven by a 2-hp. 220/440 or a 550-volt three-phase 60-cycle ac. motor operating at 1,750 and 3,500 rpm. It is totally-enclosed ball-bearing design. The oscillating action is by a second motor with a 20-to-1 reduction gear. The oscillating action is controlled at a separate switch. Amplitude of movement is through ⅝ in. at the rate of 86 oscillations per minute.

**The spindle** takes abrasive sleeves from ¼ to 4 in. in diameter and from 6 to 11 in. in length. It also will drive grinding wheels to 5 in. in diameter and 5 in. in width. A built-in safety device prevents use of the high speed with large-diameter wheels. The work table measures 24 by 32 inches. List price is $1,275.

BREVITY—Identify by IEN - 10685 if you write the maker

## DOOR . . Overhead rolling design made in steel panel construction

**Source: CONTINENTAL WIRE & IRON WORKS**
**1250 S. Ashland Blvd., Chicago 8, Ill.**

**Company invites requests for bids**

**The company** announces addition of a new line of sectional-steel overhead rolling doors with standard hardware for assembly with operating equipment also standard. Designs are available for interior and exterior installations in 14, 16 or 18 gage steel. Manual or power operation can be specified together with door dimensions to fit any existing openings.

BREVITY—Identify by IEN - 10686 if you write the maker

## MARKING . . Quick drying ink in bottle fitted with a felt tip

**Source: SPEEDRY PRODUCTS INC.**
**19 Rector St., Room 1217, New York 6, N. Y.**

**Magic Marker** is a new "package" for the company's quick-drying ink in which the cap-fitted container carries a felt tip. The complete unit is employed as a marking instrument after the cap has been removed. When the ink supply is used up, the tip section is unscrewed and attached to a fresh refill. The ink is available in nine colors including black and white. List price is about 70 cents for a complete unit. Refills are 25 cents each.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10687 if you write the maker

BREVITY—Identify by IEN - 10688 if you write the maker

# Champ Hot Water Team!

# JOHNSON

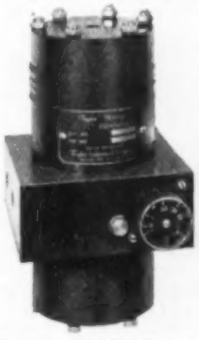
**Heater plus steam**

It's one of industry's favorite ways to heat water or process liquids of all sorts. Just hook up the Johnson "Instant" Heater to your high pressure steam lines; no reducers needed. Efficient design provides maximum contact between the water and steam-heated surfaces, transfers more heat more rapidly. Whatever your liquid heating job, get the Johnson money-savings facts.

**Sizes for all needs; write for literature.**

**The Johnson Corporation**
846 Wood St., Three Rivers, Mich.

BREVITY—Identify by IEN - 10689 if you write the maker



*Both Proportional and Reset Control Responses Adjusted by . . .*

**ONE KNOB**

**Taylor's new BI-ACT* Controller** has *two* control responses, proportional and automatic reset, both adjusted with *one* stability knob. Its dependable performance and simple adjustment make the inexpensive BI-ACT Controller the ideal instrument for applications where the precision performance of Taylor's three response TRI-ACT* Controller is not considered essential.

**The BI-ACT and TRI-ACT** Control elements are alternates in Taylor's TRANSET* Control System, which controls any process variable with accuracy never before thought possible. For full information, see your Taylor Field Engineer or write for **Bulletin 98097.** Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

*Trade-Mark

**TAYLOR INSTRUMENTS MEAN ACCURACY FIRST**

BREVITY—Identify by IEN - 10690 if you write the maker

# IT'S THE BEST!

# ROCKWOOD ball VALVES

Rockwood ball Valves are best because they last longer with no maintenance—are easy to open and close under pressure and will stay tight in a closed position. They handle many kinds of chemical fluids as well as abrasive or corrosive mixtures without injury to the seat or valve. Thousands of Rockwood ball Valves are giving continuous operation in chemical, food, paper, textile and other process plants, oil refineries and many other types of industries. Made in sizes from ½" to 4" for 300 p.s.i. working pressure. Write today for complete engineering data and prices.

*Distributors in all principal cities.*

**ROCKWOOD SPRINKLER COMPANY**
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 10691 if you write the maker

WHEN YOU PUT A LOT OF LITTLE ONES INTO A BIG ONE — MAKE SURE IT'S A

## JELLIFF DIPPING BASKET

70 years making Wire Mesh have taught us a lot about this material, its fabrication, and uses.

We make Dipping Baskets of any ductile metal, and in any size and shape your products and process require . . .

Naturally we believe we make them just a little bit better than the other fellows do — and a lot of people who turn to us regularly for their Dipping Baskets seem to agree with us.

*So*—for Degreasing—Pickling—Plating Anodizing — Washing — Heat Treating — or for just plain Bulk Handling or Storage of small parts in large quantities, let JELLIFF give you a no-cost no-obligation estimate for your next requirement of Dipping Baskets. Send a blueprint or specifications to Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS • FILTERS
SOUTHPORT · CONNECTICUT

BREVITY—Identify by IEN - 10692 if you write the maker

# HALT CONCRETE FLOOR WEAR

use **LAPIDOLITH*** AMAZING PATENTED CHEMICAL

with **BONDED GUARANTEE**

This concrete dusting could have been prevented with Lapidolith

**Concrete floors hardened with Lapidolith will not dust or soften! Read the amazing guarantee backed by National Surety Corporation!**

Imagine a concrete floor so hard that wear makes it *smoother*, instead of rougher.

That is what Lapidolith does for a concrete floor. When applied, a patented agent—*Dynex*—soaks the Lapidolith down into the concrete. Chemical action makes the concrete up to *10 times harder*. Your floor is dust-free . . . *much* more resistant to chemicals and wear!

**• PROVED OVER 50,000 TIMES**

Already, over 500 *million* square feet of industrial concrete floors have been hardened with Lapidolith. And now, when we supervise the application (free), or apply under contract (at nominal cost), you get a Bonded Guarantee: *no dusting—your floor must be hardened.*

Prompt action may save the cost of replacing a worn-out concrete floor. Get full information—mail the coupon *now*.

Hardened concrete is unchanged in appearance.

Floors can be used during easy application.

**MAIL FOR COMPLETE FACTS**

☐ Send full facts on Lapidolith and Bonded Guarantee

☐ Make FREE floor survey, if you have a representative in my territory. (Minimum floor area 5,000 sq. ft.)

**L. SONNEBORN SONS, Inc.**
Building Products Division
Dept. A-10, 80 Eighth Ave., New York 11

NAME _____
FIRM _____
STREET _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 10694 if you write the maker

## DRYING . . Hot air blower has double outlet, for boots and shoes

Source: CHICAGO HARDWARE FOUNDRY CO.
3501-5 Commonwealth Ave., North Chicago, Ill.

**New design** of the Sani-Dri hot-air blower previously described IEN-5007-42, provides a means to dry boots and shoes by positioning them as shown in the illustration over the double outlet. A motor-driven blower in the housing delivers 125 cfm. of air heated by an electric element rating 13.5 amperes. A circuit breaker protects the heating element if the air inlet is shut off for any reason. Operation is on 110 or 220-volt ac. or dc.

BREVITY—Identify by IEN - 10695 if you write the maker

## WIRE . . Drawn plated metal combines the properties of two metals

Source: KENMORE METALS CORP.
378-82 Ninth St., Jersey City 2, N. J.

**Fine wire gages to ⅜ in. diameter**

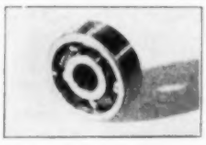
**Steel wire** plated with copper and trade named Copperon has been added to the company's line of nickel-plated steel wire and nickle or silver-plated copper wire under the trade name Fernicklon, previously described IEN-9047-47. The wire is copper plated in a patented continuous electroplating process to produce a uniform bond of pure copper on a steel core which cannot be destroyed by changes in temperature, by pounding, by hot rolling or cold drawing. Wire sizes range down from ⅜ in. in diameter to the finest wire gages.

**Representative** applications include use in float racks and as lift rods for plumbing products, in power transmission, telephone and railway signal lines, lightning rods, coaxial cables, appliance cords, radio tube leads, pig-tail leads for capacitors and resistors. The wire provides about 10 percent more footage per pound than solid copper wire since the steel core is lighter than the copper exterior.

BREVITY—Identify by IEN - 10696 if you write the maker

## BEARING . . Miniature ball unit for radial loads, has spring retainer

Source: NEW HAMPSHIRE BALL BEARINGS INC.
Grove St. B, Peterborough, N. H.



**Stainless-steel** coil springs take the place of the usual retainer in this new miniature bearing. Individual springs serve as separators between the balls. The bearing is available with $\frac{3}{32}$-in. bore, $\frac{5}{16}$-in. outside diameter and $\frac{7}{64}$-in. width. Tolerance is ABEC 5 or higher. Bearing is characterized by break-away torque rating 0.0006 in. oz. under a standardized 75-gm. thrust load. Races and balls are made of high-carbon chrome steel or of stainless steel.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10697 if you write the maker

**PULLMAX DOES IT ALL!**

**PULLMAX**
**Sheet and Plate Working Machines**

Imagine, one machine doing all of these operations—seven models that work the finest gauges up to 11/32" (in mild steel). Also ideal for working stainless, non-ferrous metal, wire mesh. Leaves a smooth perpendicular cut with no further finishing required. Pullmax does it better . . . faster.

WRITE FOR ILLUSTRATED CATALOG

**AMERICAN PULLMAX CO., INC.**
2631 N. Western Avenue • Chicago 47, Ill.

BREVITY—Identify by IEN - 10698 if you write the maker

# Clarke CLICKS with CUSTODIANS!

## Where floors take a beating...

**CLARKE FLOOR MAINTAINER**
Scrubs, waxes, polishes, steel wools, sands and shampoos. Improved safety switch. "Self-lifting" wheels. Four sizes.

**CLARKE PORTABLE WET and DRY VACUUM**
Quickly picks up water, dirt and dust. Quick-draining dump valve eliminates heavy lifting. Mounted on ball bearing, swivel, rubber casters

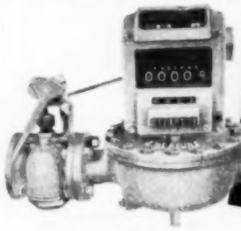
there is nothing like Clarke equipment. Custodians like Clarke machines because they make work easier and do it faster. You'll like Clarke because it's dependable—built to give years of hard service at low initial and upkeep cost. Let us prove on your own floors why Clarke machines have long been preferred for better floor care. Write for information or a demonstration.

Sales and Service Branches in All Principal Cities

**Clarke**

CLARKE SANDING MACHINE COMPANY
2810 Clay Street Muskegon, Mich.

BREVITY—Identify by IEN - 10699 if you write the maker



**NEPTUNE AUTO-STOP METERS**

## AUTOMATIC METERING *pays off!*

Wherever liquids feed into processes, these new batching meters save ingredients, hit formulas "on the nose," eliminate unsanitary conditions, and provide accurate cost figures. Save time, too! Simply push buttons to set the meter, open the valve, and the Auto-Stop cuts off at exactly the right quantity. No more gauge sticks, batch tanks or buckets. Auto-Stop sizes 1", 1½" and 2" for water, syrups, oils, and other liquids. Ask for facts—just telephone Neptune office nearest you.

NEPTUNE METER CO. • 50 WEST 50th STREET • NEW YORK 20
Atlanta • Boston • Chicago • Dallas • Denver • No. Kansas City
Louisville • Los Angeles • Philadelphia • Portland • San Francisco

BREVITY—Identify by IEN - 10700 if you write the maker

EVERYONE'S SHOUTING ABOUT **Rustygon**, THE AMAZING NEW PRIME COAT FOR METAL

★ Not an oil—a chemical that dissolves and prevents rust.
★ Expands and contracts with metal—stops peeling and blistering of paint coat.
★ Provides perfect surface for painting.
★ One gallon covers approximately 1200 sq. ft.

Rust deposit on steel forms a pitted surface.

Old method of applying oil base paint after sanding or brushing leaves rust in pits which later break through.

Rustygon goes into the pits, dissolves ALL the rust and seals the surface—stops future paint failures.

Apply Rustygon with rag, brush, spray or by dipping. Watch it dissolve rust and seal the surface against future rust. It expands and contracts with the metal which prevents peeling or cracking like oil base primers. Use on damp or dry surfaces—dries in one hour . . . covers two to four times the surface of oil base paints; priced approximately the same.

USE Rustygon FOR PRIMER BEFORE PAINTING

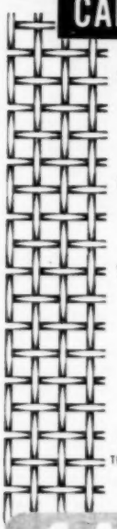
Metal roofs, iron fences, gutters, metal window sash, farm equipment, metal tanks and stacks, poles, any surface subject to rust or oxidation.

GENSCO

**GENSCO CHEMICAL DIVISION**
1836 NORTH KOSTNER AVENUE • CHICAGO 39, ILLINOIS

BREVITY—Identify by IEN - 10701 if you write the maker

# CAL-WIC WIRE CLOTH



**THE RIGHT WEAVE**

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

**THE RIGHT WEIGHT**

• • • precision-fabricated for long-lasting dependability and economy.

**THE RIGHT METAL**

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

BREVITY—Identify by IEN - 10702 if you write the maker

# WESTON *Readable* ALL-METAL THERMOMETERS

AVAILABLE IN THESE **3** TYPES

**STANDARD INDUSTRIAL THERMOMETERS**

All-metal dial types with stainless steel stems, in straight and angle forms. Scale lengths 3"–6" and 9", with stems from 2½" to 72". Available as testing thermometers, and for general purpose and heavy duty service. Ranges from −100 to +1000°F. All-metal construction prevents breakage, assures dependable accuracy for longer periods.

**CONTACT MAKING THERMOMETERS**

Combines the features of the all-metal indicating thermometer with an alarm or control device. Has adjustable contact arm mounted in the glass and bezel. Supplied to make contact on increasing or decreasing temperatures. Has positive magnetic type contacts. Contact rating . . . 100 ma at 110 volts a-c; 50 ma at 110 volts d-c. Stem lengths 2½" to 24".

**MAX-MIN® THERMOMETERS**

Equipped with a manually set red index which moves up or down scale with pointer, remaining at extreme temperature reached until reset. Thus one reading gives present temperature, and maximum or minimum reached since last reading. Available in scale lengths of 6" and 9"—stem lengths 2½" to 24".

Literature describing Weston all-metal, as well as electrical and glass thermometers, sent on request. WESTON Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

BREVITY—Identify by IEN - 10704 if you write the maker

## CONVEYING . . Portable belt unit for use in assembly, inspection, sorting

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Dept. TV, Grand Rapids 2, Mich.

**Table-Veyor** is a new assembly of motor-driven fabric belt and portable frame with side extensions about flush with the belt surface. The unit is mounted on casters for portable application. Operators can stand on the two sides to handle and work on products carried by the belt in the center of the surface.

**Drive** is by a ½-hp. motor with fixed or variable belt speed between 5 and 100 fpm. in either single or reversing direction. The belt is a 4-ply woven cotton design. Belt width is available at 10 to 20 inches. Height can be adjusted between 21 and 40 in. above the floor. Length is in 5-ft. sections with single units made up of these sections in lengths between 10 and 60 ft. to meet installation requirements.

BREVITY—Identify by IEN - 10705 if you write the maker

## FLOORS . . Asphalt base material for resurfacing use, contains rubber

Source: FLASH-STONE CO.
36 E. Rittenhouse St., Philadelphia 44, Pa.

**Excellent resistance to impact, shock**

**Immediate-Set** is new factory-mixed material consisting of asphalt rock and limestone and cold asphalt emulsion with pulverized natural rubber. The material is packed in 100-lb. lined fabric bags for protection against entrace of moisture or evaporation to permit storage for periods of time without deterioration. It is applied as received for interior or exterior patching or resurfacing. It can be used immediately after it is rolled or tamped into place.

**A ½-in. layer** is suitable for resurfacing large areas. The rubber imparts a "liveness" to the installed floor. In addition to shipment in completely mixed form, the material is available in multi-walled bags with a supplementary pail of asphalt emulsion to be added at the time of application.

BREVITY—Identify by IEN - 10706 if you write the maker

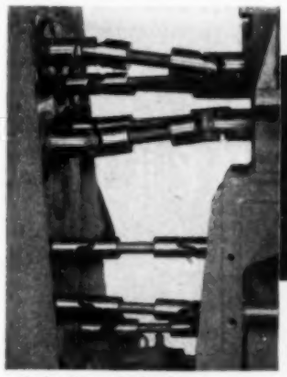
## SANDING . . Portable electric tool oscillates abrasive pad at 4,000 rpm.

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Dept. PR-1, Syracuse 8, N. Y.

**Universal motor** for operation on 110-volt ac. or dc. drives the oscillating pad in this new Guild-106 sanding unit. The pad takes ½ of a standard 9 by 11-in. sheet of sand paper, holds it with a patented paper clamp. An air intake draws in cooling air for the motor out of the path of the sanding action. The tool measures 9½ by about 4 by 6½ in. in height. List price of the new portable tool is about $50.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 10707 if you write the maker



**BOSTON HEAVY DUTY UNIVERSAL JOINTS**

There are sixteen BOSTON UNIVERSAL JOINTS (3 to 8 HP, 180 to 275 R.P.M.) on this massive Yoder Down Coiler for 2000 lb. brass coils.

Yoder Down Coiler Drive

**For dependable performance, specify BOSTON UNIVERSAL JOINTS**

ALL PARTS INTERCHANGEABLE

Stocked by 80 Authorized Boston Gear Distributors — One Near You.

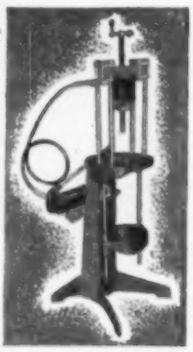
For stock sizes, prices and HP ratings, see Boston Gear Catalog No. 53. Free copy on request.

**BOSTON GEAR WORKS**
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 10708 if you write the maker

*new* OTC POWER-TWIN

## PORTABLE PEDESTAL PRESS



An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

**STRONG.** Handles 95% of all pulling or installing jobs. Especially designed for use with OTC 1½ ton Hydraulic Puller.

**AMAZINGLY PRACTICAL** for all production, assembly line and maintenance operations.

**PORTABLE OR PERMANENT.** Easily moved from job to job or located near permanent equipment.

**COMPACT.** Base is only 20 x 21 inches.

**VERSATILE.** Provides almost unlimited vertical adjustment for pulling or installing wheels, pulleys, bushings, collars, couplings, gears, shafts and bearings.

**POWER-TWIN HYDRAULIC BENCH PRESS**

Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

*See your jobber for complete information or write us.*

**OWATONNA TOOL COMPANY**
371 CEDAR STREET • OWATONNA, MINNESOTA

BREVITY—Identify by IEN - 10709 if you write the maker

## Keep your Storage Area Flexible with MHS COLLAPSIBLE PALLET RACKS

*Method of assembling a bank of MHS Collapsible Pallet Storage Racks.*

You can set up MHS Collapsible Pallet Storage Racks easily and quickly anywhere in the plant or warehouse. It takes only two men and they needn't be skilled.

You can add any number of units longitudinally and one or more tiers vertically at any time.

You can move these racks from place to place without damage. They never become obsolete.

Write for prices and specifications.

**Mechanical Handling** *Systems, Inc.* MHS
4605 NANCY AVE. • DETROIT 12, MICH.
*Offices in Principal Cities*
In Canada: Canadian Mechanical Handling Systems, Ltd.

BREVITY—Identify by IEN - 10710 if you write the maker

## eliminate manual removal of work

***Schrader Air Ejection Sets pay for themselves in a few weeks.***

Give your power press operators a new lease on life by equipping the press with a Schrader Air Ejection Set. Let compressed air blow the finished work from the die . . . and watch production increase.

Moreover, in many cases where Schrader Air Ejection Sets, with synchronized intermittent air blasts have replaced continuous air work ejection, air savings have been *as high as 90%.*

Where the work requires mechanical knockout because of weight or size, Schrader supplies a cylinder actuated Knockout-Set, which also can be synchronized with the ram movement.

Write today for more information about Schrader Air Ejection Sets.

**A. SCHRADER'S SON**
*Division of Scovill Manufacturing Company, Inc.*
458 Vanderbilt Avenue, Dept. D-2, Brooklyn 17, N. Y.

BREVITY—Identify by IEN - 10711 If you write the maker

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

**Sturtevant Mill Company**
113 Clayton Street, Boston 22, Mass.

BREVITY—Identify by IEN - 10712 If you write the maker

**JOY WG-9 "Industrial-Air" COMPRESSOR**

***Saves space — gives you top efficiency — built for heavy duty***

- ★ Full force-feed lubrication of all working parts
- ★ Replaceable cylinder liners and crosshead guides
- ★ Small floor area and simple foundation requirements
- ★ Anti-friction main bearings

**17 Sizes—99.6 to 881 CFM**
**20 to 150 psi**
**FREE BULLETIN**

For complete details, write for new Bulletin A-43, or...

*Consult a Joy Engineer*

W&D 13066

**JOY MANUFACTURING CO.**
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

BREVITY—Identify by IEN - 10713 If you write the maker

**When 3 draftsmen must do the work of 4**

**you need Hamilton Auto-Shift Drafting Tables!**

Actual case histories give proof that Hamilton Auto-Shift tables boost drafting room production as much as 30%. Why? Because the almost astonishing *flexibility* of Auto-Shift permits instant, effortless adjustment to any working position, cuts draftsman fatigue dramatically. Under your present work load you can't afford to be without Auto-Shift tables. To insure delivery, contact your Hamilton Dealer at once.

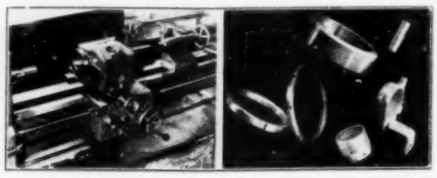
HAMILTON WORK DESIGNED DRAFTING EQUIPMENT

*Hamilton Manufacturing Company*
TWO RIVERS, WISCONSIN

BREVITY—Identify by IEN - 10714 If you write the maker

**THREADING . . Power feed attachment for lathe, milling machine, grinder**

Source: GUBELIN INTERNATIONAL CORP.
35 W. 53rd St., Fifth Floor, New York 19, N. Y.



**New attachment** mounts on a lathe cross slide or a milling-machine table, and on certain plain grinding machines, for operation in connection with a suitable multiform thread-milling cutter that mounts in the machine spindle. Short work pieces, to approximately 6 in. in diameter, can be mounted in the three-jaw chuck provided with the attachment. Pieces to 7 in. in diameter, or of irregular contour, assemble on a face plate which also is provided. Long work up to 2½ in. in diameter will pass through its spindle.

**Collets, split bushings** and a long work support are available for work diameters from 1/32 to 2½ inches. Thread lengths up to the work diameter, or a maximum of 2 in., can be cut in material testing 40 on the Rockwell C scale in 1⅙ revolutions of the work piece. Soft materials can be threaded in length to 1½ times the work diameter or 3 in. maximum if the work piece is more than 2 in. in diameter. Pitch range is from 6 to 40 threads per inch. Multiple threads can be produced providing the lead is not coarser than 6 threads per inch.

**Drive** is by a 1/30-hp. two-speed motor with a speed reducer providing a ratio of 1,081 to 1. The motor is a three-phase unit subject to specification for standard voltage. It is reversible to provide for right and left-hand threads. Limit switches at each end of the lead indicator prevent over-travel of the spindle. A scale shows spindle position both for set up and operation arrangements.

**Six spindle speeds** are available by various combinations of the motor speed and internal gearing as selected by a lever. Master screw sets are available for all the standard leads. The same set is used for all forms and diameters providing the lead does not change. Any form of thread can be cut except for full-square and buttress styles. List price is $1,240.

BREVITY—Identify by IEN - 10715 If you write the maker

**RESISTOR . . Miniature unit, solder lug terminals, sealed design**

Source: SHALLCROSS MFG. CO.
8-12 Jackson Ave., Collingdale, Pa.

**Akra-ohm Type 1180** is a new miniature hermetically-sealed resistor that meets requirements of JAN-R-93, Characteristic A, Style RB11. Overall dimensions are about ⅝ in. in length by ½ in. in diameter. Rating is 0.25 watt and 250 volts. Resistance value can be obtained to 0.1, 0.3 or 0.4 megohms depending on the alloy wire used for the non-inductive winding. Steatite is impregnated to prevent entrance of moisture or collection of fungus. The unit can be immersed in salt water without affecting it.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10716 If you write the maker

*Don't Underestimate the power of the*
**BANTAM BULLY!**

13,000 sharp, effective blows a minute! ...sharp enough to cut cold rolled steel!

The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

***Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.***

**Superior Pneumatic** division of **Herbrand Tools**
4758 WARREN ROAD, GARFIELD HEIGHTS, OHIO

BREVITY—Identify by IEN - 10717 If you write the maker

THERE'S A LEAK PROOF DeZURIK VALVE FOR EVERY **VALVING PROBLEM**

PUT AN END TO LEAKS in any service with a DeZurik Valve . . . the only valve with the dead-tight rubber-faced plug. Made in a full series of sizes and metals, 1-way to 5-way. Get the complete DeZurik Catalog with over 400 service recommendations.

**DeZURIK SHOWER CO.**
SARTELL, MINN.
(Made in England by MILLSPAUGH, LTD., Sheffield)

BREVITY—Identify by IEN - 10718 If you write the maker

**No Special Wiring... with IBM Electronic Time Control**

**ELECTRONIC**—*no special clock or signal wiring.* Time systems operate and are supervised by electronics over regular AC lighting wires.

**ECONOMICAL**—low installation cost. Time units can be re-located easily without special clock or signal wiring.

**EFFICIENT**—automatic coordination of clocks, recorders, and signals to the second. Uniform time is assured in all units.

**Write for information today**

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
590 Madison Avenue, New York 22, N. Y.

BREVITY—Identify by IEN - 10719 If you write the maker

**insist on "buried" integrity in your products**

In the durable goods field most of the products are composed of many component parts. Acadia Synthetic Rubbers are contributing importantly to the superiority of thousands upon thousands of these products on land, sea, and in the air—from battleships to tiny instruments. For years manufacturers in hundreds of industries have found by experience that, with Acadia Synthetic Rubber parts in their products, they will never have trouble from that source. Acadia is a "buried" but vital component for products of highest integrity. Insist upon it!

**for every synthetic rubber requirement**

sheets • tubing • strips • channel • washers
seals • bellows • gaskets • rings
extrusions • cut parts

*Resists oil, age, wear, heat, light*

**ACADIA** *Synthetic* PRODUCTS
Processors of Synthetic Rubber and Plastics • Sheets • Extrusions Molded Parts

**DIVISION WESTERN FELT WORKS**
4035-4117 Ogden Avenue, Chicago 23, Illinois

BREVITY—Identify by IEN - 10720 if you write the maker

# CANNON PLUGS | hermetically sealed

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.

Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.

Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.

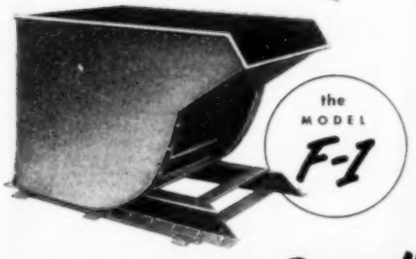
*Request Bulletin No. GS-2 for engineering data.*

**CANNON ELECTRIC**

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

BREVITY—Identify by IEN - 10721 if you write the maker

# Here's the Answer to BULK MATERIAL HANDLING PROBLEMS

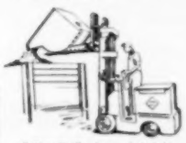



## Phillips "Skid-Dump"

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump." Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

*Write for Bulletin E-15*

Heaviest materials easily handled with pallet truck.

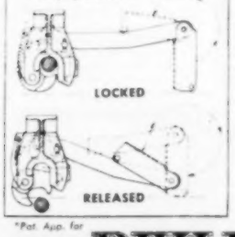


Automatically dumps materials, returns, and locks in original position.

Conveniently stacked, empty or full.

**New Safety Lock***

Provides maximum safety for operator—prevents accidental dumping of load.




*Pat. App. for

MANUFACTURERS SINCE 1863 **PHILLIPS** PITTSBURGH, PA.

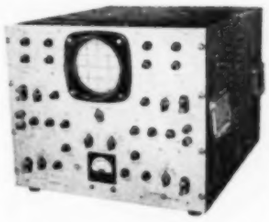
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET · PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 10723 if you write the maker

## TESTING . . Oscilloscope, dual channel design, flat response

Source: ELECTRONIC TUBE CORP. 1202 E. Mermaid Lane, Dept. N, Philadelphia 18, Pa.



**Model H-23** is a new dual-channel oscilloscope in the company's line of similar equipment, previously described IEN-5529-49. Two independent channels work into a single-gun cathode-ray tube to permit high or low-frequency phenomena to be viewed either singly or simultaneously on the single tube face. The instrument features flat frequency response from dc. to 1 megacycle. Vertical deflection amplifiers have capacitive and conductive input attenuators to permit operation as either ac. or dc. coupled amplifiers.

**Each channel** has an independently operating sweep generator. Both channels can be switched to the same sweep to permit examination of two related phenomena on a common line basis. The sweep generators are designed for either single sweep or recurrent operation. Independent control of intensity, focus and positioning of each of the electron beams is available. So also is intensity modulation of each of the cathode ray beams.

**Operation** is on 110-volt 60-cycle ac. with power consumption at 350 watts. Dimensions are 21 by 22½ by 16½ inches. Cabinet or relay rack mounting is available. Weight is 110 pounds. Carrying handles are provided.

BREVITY—Identify by IEN - 10724 if you write the maker

## BRAZING . . Steel strip is clad with silver brazing alloy

Source: AMERICAN SILVER CO. 36-09 Prince St., Flushing, N. Y.

**Width** is to 4 in. and required thickness is minimum at 0.005 in. in new steel strip. Silver brazing alloy is clad on one or both faces as required. The clad steel is a further development of the similarly clad non-ferrous metal strip, previously described IEN-10079-50. It is for silver brazed assemblies to be assembled by furnace or induction heating without need for pre-placed rings, washers or other forms of separate brazing material.

**The alloy** can be clad in any thickness ratio and melting range to suit given requirements. Diffusion in the cladding acts to control flow during brazing and eliminates the necessity of cleaning off over-flow or excess fillets. The heating cycle is minimized since there is no need to depend on capillary flow to distribute the brazing alloy. Braze-clad is the trade name.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10725 if you write the maker

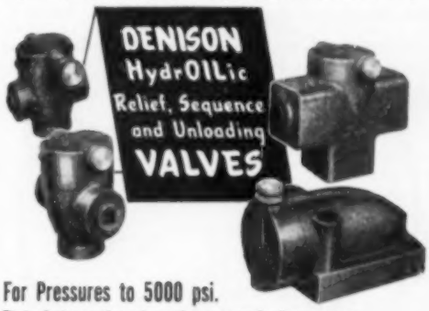
# DARNELL CASTERS

SAVE EQUIPMENT.... FLOORS....

DARNELL CORP. LTD. Long Beach 4, Calif.

60 Walker St., New York 13, N. Y.
36 N. Clinton, Chicago 6, Ill.

BREVITY—Identify by IEN - 10726 if you write the maker




## For Pressures to 5000 psi.

### Their faster action gives closer control of pressures

In Denison Pressure-Control Valves, *lower differential between opening and closing pressures* brings faster action . . . closer control of system pressures . . . a reduction in over-pressure and pressure-drop conditions.

*Extremely close fit* of all inner sealing surfaces also boosts efficiency by reducing leakage to near-zero.

The rugged, compact construction of Denison HydrOILic Valves saves space and simplifies circuit design. Available with threaded bodies, or for subplate mounting, they offer widest latitude for positioning in the system. Pressure control knobs can be placed in either of two positions. Remote control of the pressure unloading adjustment can also be utilized.

These advanced features are the result of a *quarter century* of research and manufacturing experience at Denison, by engineers who *specialize* in oil-hydraulic equipment.

*Comparison* quickly proves the many advantages of Denison HydrOILic Valves, as reported by users in every field. Check with Denison on any valve needs, for circuits to 5000 psi.

**The DENISON Engineering Co.**
1150 Dublin Road Columbus 16, Ohio

**DENISON HydrOILics**

BREVITY—Identify by IEN - 10727 if you write the maker

# SPRING STEEL

**Roebling Cold Rolled brings fewer machine stoppages . . . fewer rejects**

YOU SAVE MONEY with Roebling Cold Rolled Spring Steel. Its physical and dimensional uniformity cuts costs; gives a better product, better production. And Roebling Cold Rolled is made as you want it—annealed, hard rolled untempered; scaleless tempered; tempered and polished, strawed or blued.

Large quantities of Roebling specialty wires—flat, round and shaped—are now required in the rearmament program. We will always, however, do everything possible to meet your requirements. John A. Roebling's Sons Company, Trenton 2, N. J.

# ROEBLING

BREVITY—Identify by IEN - 10728 if you write the maker

## Need strapping for defense orders?

## Perhaps we can help!

**Gerrard Round Steel Strapping complies with JAN-P-106A and JAN-P-108**

Steel sheets are securely Gerrard-strapped for export. Round strapping permits bundles to slide over each other without tearing the straps.

● A Gerrard engineer will gladly give you all possible help with your defense packaging problems. Frequently, he can show you how to get more use out of your steel strapping by bundling, palletizing or using the Diagonal Tie. You can depend on his advice . . . and on the strength of Gerrard Round Steel Strapping. It complies fully with the joint Army-Navy specifications JAN-P-106A and JAN-P-108 for overseas packing.

Strapping for defense receives preference in delivery according to current regulations. Strapping available for non-defense uses is being equitably distributed among our customers.

Gerrard Steel Strapping Company, 4701 S. Richmond St., Chicago 32, Ill.

USS **GERRARD ROUND STEEL STRAPPING**

UNITED STATES STEEL

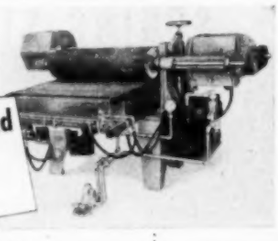
BREVITY—Identify by IEN - 10729 if you write the maker

Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

**THE BABCOCK & WILCOX CO.**
*Refractories Division*
85 LIBERTY ST., NEW YORK, N. Y.
WORKS: AUGUSTA, GEORGIA

BREVITY—Identify by IEN - 10730 if you write the maker

**Precision**



**for improved surface finishing**

**CLAIR**
**SURFACE FINISHING MACHINES**

With adjustable, abrasion-proof hydraulic controls permitting rapid change of variables, these machines assure quality surface finishing on a production basis. With magnetic or vacuum chuck, Clair Machines are custom-built to solve your surface finishing problem.

**For efficiency in surface finishing products like these:**
Screw Drivers
Chisels • Pliers
Saws • Wrenches
Compacts • Fan Blades
Cigarette Cases
Fine Silver
Surgical Instruments
Flat Iron Sole Plates

**CLAIR**
**MANUFACTURING CO., INC.**
*Specialized Machine Equipment For Glazing and Polishing Operations*
OLEAN, N. Y.

BREVITY—Identify by IEN - 10731 if you write the maker

# Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon-high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

**You Harden It—We'll Drill It—With "HARDSTEEL"**

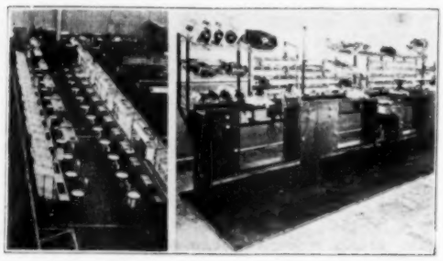
**BLACK DRILL COMPANY**
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

*Also makers of—* BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
*Write for information*

BREVITY—Identify by IEN - 10732 if you write the maker

## FURNITURE . . Assembly bench to specification for given operations

Source: COLEMAN-PETTERSEN CORP.
2121-25 St. Clair Ave., Cleveland 14, Ohio

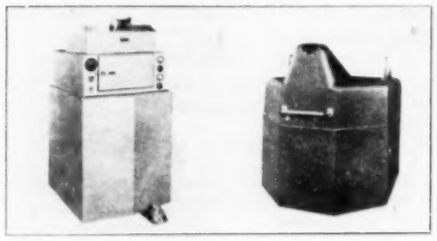


**Erectosembly** trade names a new custom-built combination of assembly bench with a vise mounted to ride on a track and with racks supporting baskets and plastic trays and cups, all of which can be kept supplied from the rear in a multiple installation. The equipment was designed originally for parts assembly in connection with aircraft manufacture. It is available now for specified use to include components particularly developed for that use. The lower part of each bench provides storage space in compartments and small drawers. Extension boards can be pulled out to supplement the regular working surface.

BREVITY—Identify by IEN - 10733 if you write the maker

## TESTING . . X-ray or fluoroscope for radiographic work inspection

Source: M. B. ADRIAN & SONS X-RAY CO.
344 E. Ward St., Milwaukee 7, Wis.



**New designs** have been added to the company's line of stationary and conveyor type fluoroscopic X-ray inspection equipment by which an operator can see interior faults on an observation screen. A new transformer produces a bright picture. New design of the ray-proof interior with sealed housings lead-lined in vital spots assures worker protection.

**List prices** range from $1,295 to $4,250 in a number of standard sizes measuring 40 by 40 in. to 55 by 55 in. with cross-inspection units measuring 40 by 78 inches. Other assemblies can be supplied to specification.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

**FIND WHAT YOU WANT?**
Products are listed by name and function on page 118

BREVITY—Identify by IEN - 10734 if you write the maker

*Depend on*
**AUTO-LITE**
**FOR TEMPERATURE INDICATION**

Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25.

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

**THE ELECTRIC AUTO-LITE COMPANY**
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

**AUTO-LITE**
INDICATING & RECORDING THERMOMETERS

BREVITY—Identify by IEN - 10735 if you write the maker

**COMPLETE EASE OF OPERATION in a controller**

**Any control action easily reproduced.**

The Bristol Series 500 Air-Operated Controller permits you to do it by *merely setting a dial!*

This saves hours of shutdown.

*Easiest to service*, too. Simple design, fewest parts, close-tolerance manufacturing—make the instrument interchangeable throughout. One simple adjustment puts it back in exact calibration after complete disassembly and reassembly.

Five types for controlling temperature, flow, pressure, liquid level, humidity, pH. Write for Bulletin 120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

**BRISTOL**
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 10736 if you write the maker

**WALES SHEET METAL FABRICATOR** provides rapid interchangeability for punching and notching. Work from blue prints or operation sheets. *No Templets Required.* Write for Catalog 10-A.

**WHY IT PAYS TO STANDARDIZE ON WALES SHEET METAL EQUIPMENT**

● In practically every sheet metal fabricating plant or department there is a need for Wales Machinery and Equipment. Standardizing on this versatile line assures the exact type for various operations.

*For example*, hole punching and notching operations may be performed on either the Wales Fabricator or on the Wales Twin Column Press with Wales Hole Punching and Notching Units. Depending on the number of parts and the size and shape of the work, one piece of Wales Equipment is more efficient and economical than the other.

To fully determine which Wales Equipment is most applicable to a particular type of work, call on Wales Engineers who have years of experience in the most economical way to fabricate sheet metal parts. Yes, make it standard practice to call on Wales Engineers FIRST for their valuable suggestions.

**WALES-STRIPPIT CORPORATION**
George F. Wales, *Chairman*
361 Payne Avenue, North Tonawanda, N. Y.
*(Between Buffalo and Niagara Falls)*
Wales-Strippit of Canada, Ltd., Hamilton, Ontario

**WALES DRILLING MACHINE** is especially designed to meet the exacting requirements of locating, drilling and reaming holes in material of practically any length and up to 36" wide. Write for Catalog DM.

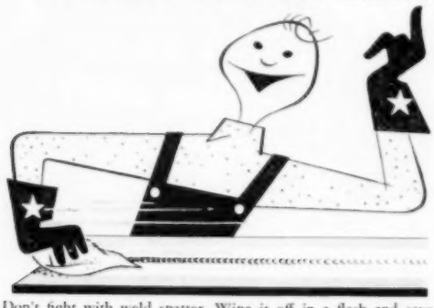
**WALES TWIN COLUMN PRESS** features simplicity of design that fulfills the engineering axiom—"building it simple builds it better". In many cases, this press eliminates the necessity of a die set. Write for Catalog TC.

**TRU-EDGE CONTOUR SHEAR** cuts and trims irregular shapes and circles and also beads, rigidizes, forms and flanges. Ideal for accurate, short run work eliminating prohibitive die costs. Write for Catalog TS.

*Specialists in Punching and Notching Equipment*

BREVITY—Identify by IEN - 10738 if you write the maker

## WIPE WELD SPATTER CLEAN



Don't fight with weld spatter. Wipe it off in a flash and save up to 85% of weld cleaning labor. Simply brush Protect-O-Metal No. 2 on weld area and adjacent surfaces, weld, and unsightly troublesome weld spatter wipes clean with a dry cloth. Get smooth, clean welds ready for painting, if desired. P. O. M. No. 2 does not cause smoke, fumes or odors; contains no organic ingredients. One coat serves for single or multi-pass welds, costs a tenth of a cent per foot of weld, saves up to three times its cost in time savings alone. Order a trial gallon ($3.25).

PROTECT-O-METAL POM

G. W. SMITH & SONS, INC. GWSMITH 5046 KEMP ROAD, DAYTON, O.

BREVITY—Identify by IEN - 10739 if you write the maker

## SOUND THE ALARM where air pressure failure is important

the new, automatic low pressure air alarm for compressed air systems

Blows continuous shrill whistle when air line pressure drops below pre-selected value. Automatically stops blowing when pressure is restored. Completely mechanical; entirely self contained; requires no auxiliaries. Fig. 130, Industrial Model, illustrated, is only 4½" high over-all. Price $12.75.

Distributorships Open

AIRLARM P. O. BOX 13034 HOUSTON 19, TEX.

BREVITY—Identify by IEN - 10740 if you write the maker

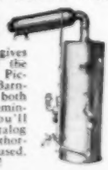
## PURE WATER DISTILLED WATER? PROBLEMS SOLVED WITH Barnstead EQUIPMENT

## DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed. Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

**WRITE**



Catalog 123 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

Barnstead STILL & STERILIZER CO.

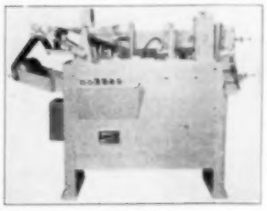
First in Pure Water since 1878

50 Lanesville Terrace, Forest Hills, Boston 31, Mass.

BREVITY—Identify by IEN - 10741 if you write the maker

## PACKAGING . . Bag making machine handles heat sealing film, foil, paper

Source: BARTELT ENGINEERING CO. 315-19 S. Madison, Rockford, Ill.



**Heat sealing** material feeds from a roll at the left hand end of this new machine as it is shown in the illustration. The sheet or strip moves toward the right through a folding operation and into a head where electronically-controlled heat-sealing irons close the seams. Heat can be set at 100 to 600 deg. F. The machine will make bags from 1 by 1 in. to 8 by 8 inches.

**Operation** is at 180 bags per min. depending on size and the material being handled. The bottom seal is optional, at this point being designed so a seal can be made in various widths or omitted. Completed bags deliver from a chute at the right-hand end into an appropriate receptacle.

BREVITY—Identify by IEN - 10742 if you write the maker

## WATER TREATING . . Liquid chemical to combat foaming in a boiler

Source: WESTERN CHEMICAL CO. 715 Washington St., Kansas City 6, Mo.

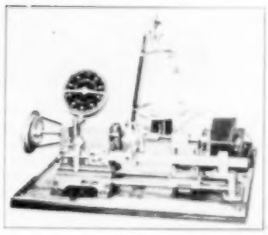
Gallon weight about 8 pounds

**Anti-Foam** is a new liquid chemical for addition to the make-up water prior to feed to a boiler. Inside the boiler the chemical combats foam formation to assist the boiler in producing clean dry steam. Continuous feed is recommended although slug feeding is permissible. List price is 16 to 20 cents per pound in 55 to 15 gal. drums.

BREVITY—Identify by IEN - 10743 if you write the maker

## WINDING . . Motor driven machine for wire coils to 12 in. in length

Source: GEO. STEVENS MFG. CO. 6022-24 N. Rogers Ave., Chicago 30, Ill.



**Winding speed** is to 7,000 rpm. on this recently improved design of the company's Model-112 bobbin-winding machine. By addition of a longer lead screw than standard the machine is now able to wind coils from ¼ to 12 in. in length and to 3 in. in outside diameter. It will handle wire from 18 to 44 gage, can be set up in 5 to 10 minutes. A 6-in. clock dial reads the number of turns wound to a total of 2,500 or 10,000 in two available models. Dimensions are 28 by 20 by 14 inches.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10744 if you write the maker

## TRANSFORMERIZED MACHINES FOR EFFICIENT PLANT PRODUCTION

Every motorized machine tool equipped with a transformer is its own individual power distribution station. Buildings can be wired for high voltage, and voltage reduced for power and light at the machine. This permits savings in building wiring, quick shifting of machines in a production line.

Acme Electric Air Cooled transformers are available in sizes from 1/10 KVA to 50 KVA, Class "A" insulation (55° temperature rise), and in capacities from 3 KVA to 167 KVA class "B" insulation (80° temperature rise). Primary voltages of 2400, 600, 480 or 240. Designed for high efficiency performance. Constructed for long trouble free service.

ACME ELECTRIC CORPORATION 2610 WATER ST. CUBA, NEW YORK

Acme Electric TRANSFORMERS

BREVITY—Identify by IEN - 10745 if you write the maker

## NORTHERN HEAVY DUTY HI-LIFT HOISTS

For handling a lot of different loads in general purpose use, Northern Heavy Duty Hi-Lift Hoists will give you wider service per dollar of investment.

*for safer, faster material handling at all times*

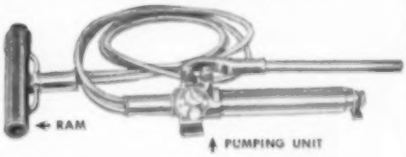
Northern Cranes are designed and built to give you safer, faster overhead material handling at all times.

NORTHERN ENGINEERING WORKS 2615 Atwater, Detroit, Mich.

NORTHERN CRANES

BREVITY—Identify by IEN - 10746 if you write the maker

## *Cut maintenance costs in YOUR plant . . . . .*




## with a HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

You can save manpower, time and money at hundreds of maintenance and production jobs with a H-W Push and Pull Hydraulic Jack. In models of 4, 10 or 20 tons capacity, these units offer direct push or pull power for moving, pressing, bending, straightening, lifting and lowering operations. Operated by remote control. Available with stand and press to give you a portable workshop. Get complete details from your H-W distributor, or write us.

Hein-Werner HYDRAULIC JACKS

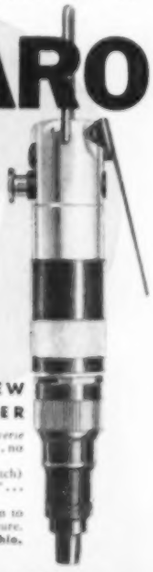
HEIN-WERNER CORP. Waukesha, Wisconsin

Also manufacturers of a complete line of hydraulic jacks in models from 1½ to 100 tons capacity.

BREVITY—Identify by IEN - 10747 if you write the maker

## *New!* NOBODY BUT ARO OFFERS YOU

*Instant PUSH-BUTTON Reverse*



**A REVOLUTIONARY SCREW DRIVER AND NUT SETTER**

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

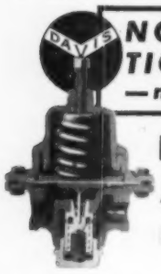
Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

The Aro Equipment Corporation, Bryan, Ohio. Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

BREVITY—Identify by IEN - 10748 if you write the maker




NON-STICKING!
TIGHT CLOSING!
—no pressure build-up

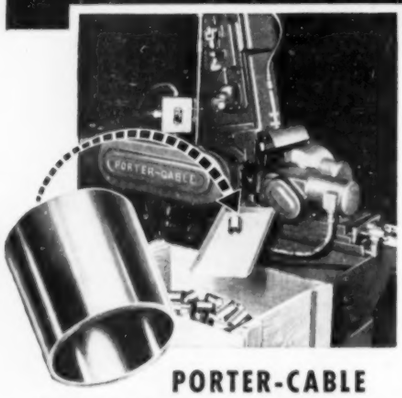
DAVIS NO. 13
AUTOMATIC PRESSURE
REDUCING VALVES

- FOR MANY USES—
  No. 13 regulator designed for reduced flow requirements in heating equipment, vulcanizers, molding presses, steam kettles, etc.
- EXCLUSIVE DESIGN—
  Single seated, tight closing, non-sticking. Large diaphragm, sensitive pressure adjustment. Compact, rugged, self-contained. Orifice type insures high lift, low maintenance.
- TROUBLE-FREE SERVICE—
  Built-in strainer, finest quality, all internal parts accessible and renewable without disturbing piping.
- FOR STEAM, AIR, OR GAS—
  For initial pressures to 250 p.s.i.; reduced pressures, 1 to 100 p.s.i. Sizes from 5/8" to 2". Bronze or semi-steel bodies; bronze or stainless trim. Economical for use on small units. *Write for literature.*

DAVIS REGULATOR CO.
*Established 1875*
2529 SO. WASHTENAW AVE. CHICAGO 8, ILL.

BREVITY—Identify by IEN - 10749 if you write the maker

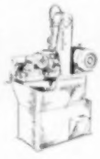
8 TIMES FASTER!...
on this centerless grinding job




PORTER-CABLE
ABRASIVE-BELT MACHINING

**The piece:** Steel tubing, 16 ga. x 1⅜" O.D.
**The job:** Grind to size with a good finish. Maintain tolerance of .002".
**Previous method:** Pieces individually mounted on arbor . . . placed between centers on a cylindrical grinder.
**New method:** Work placed on a Porter-Cable Centerless Wet-Belt Grinder. Through-feed fixture used—.002 to .004" removed — tolerance maintained.
**Result:** .23 hrs. per 100 pieces by new method, against 1.95 hrs. per 100 pieces by old method . . . a saving of 1.72 hrs. per 100 pieces!

Porter-Cable's L-4 Centerless Wet-Belt Grinder saves 75% to 90% of set-up time on a wide range of work. Eliminates truing, balancing and continual wheel dressing. Handles stock from 3/32" to 2¼" dia. Diameter reduction up to .010". Size control to ± .001" or better.


Model L-4

*Send for free booklet—shows how Abrasive-Belt Machining reduces costs on many operations.*

Abrasive-Belt Machines for Every Application

Automatic Feed Grinder | Contour Grinders | Flexible Belt Grinders | Bench Grinders | Platen Grinders | Contact Grinders

PORTER-CABLE MACHINE COMPANY
6010 N. Salina St., Syracuse 8, N.Y.
Please send me your booklet: "Abrasive-Belt Machining."
Name
Address
City State

Mfgrs. of SPEEDMATIC and GUILD Electric Tools
In Canada write: Strongridge, Ltd., St. Catherines, Ont.

BREVITY—Identify by IEN - 10751 if you write the maker

## SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: JARI PRODUCTS INC.
2936-40 Pillsbury Ave., Minneapolis 8, Minn.

**Rotary rake** driven by the engine on this new assembly of the company's Jari, Jr. walking power unit bites into snow as the unit moves forward under its own power. It cuts a path 16 in. in width. The machine picks up the snow as it cuts and directs it outward through a chute to one side or the other.

**The machine** weighs 129 lb. In complete assembly with the power unit. It also can be supplied as an attachment weighing 39 lb. to fit Jari Jr. power units now in service. The gasoline engine rates 1½ hp.

BREVITY—Identify by IEN - 10752 if you write the maker

## BUILDINGS . . Plate glass absorbs heat, minimizes glare from sun

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

**Color is pale bluish green**

**Windows** for offices and factories where vision comfort is a desirable factor, along with ample daylight and minimized input of solar heat, are typical points for application of the company's recently improved heat-absorbing plate glass. Show windows back of which perishable products are displayed constitute another excellent point for its use. The polished plate is manufactured in ¼-in. thickness. It transmits 76.5 to 79 per cent of average daylight and stops 50 to 58 per cent of the total radiation of the sun. It can be heat treated to make it 4 to 5 times as strong as conventional plate glass. Maximum dimensions are 100 by 150 inches.

BREVITY—Identify by IEN - 10753 if you write the maker

## TRUCK SEAT . . Airfoam cushioned to minimize driver fatigue, adjustable

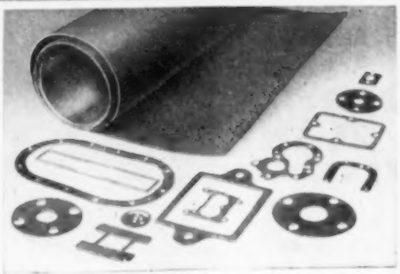
Source: GOODYEAR TIRE & RUBBER CO.
1142-46 E. Market St., Akron 16, Ohio

**New seat** employs a tubular frame. Airfoam cushioned and covered with suitable material. Overall dimensions are about 20½ by 26 by 28 inches. The seat is adjustable fore and aft through 4 in. in seven steps. Seat-cushion pitch and the seat height are also adjustable through 2½ in. in the same number of steps. The back raises and lowers with the cushion adjustment. The back cushions tilt in seven positions.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10754 if you write the maker

MELRATH GASKETS



GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS

*MELRATH No. 125* . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc. Proven for over 30 years.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

BREVITY—Identify by IEN - 10755 if you write the maker

How sure are you of your steam supply?

When your boiler calls for water, your entire plant depends on the boiler feed pump . . . that's when quality pays off. You can depend on the Roth Boiler Feed Unit because of the user-proven reliable Roth boiler feed pump. Thousands of boilers in plants such as laundries, dairies, cleaning plants, food processing—across the country rely on the dependable Roth Boiler feed pump. Check your boiler feed pump now. Be sure of your steam supply . . . for dependability, use Roth Boiler Feed Pump or install the complete "package" Roth Boiler Feed Unit.

*Insist on these quality features in your boiler feed system:*
High pressure, long life, precision built pump. Guaranteed performance. Strainer that assures flexible connection to suction, dampens vibrations. Machine welded, heavy gage steel receiver.

*Write us today, or ask your dealer, for complete data!*

ROY E. ROTH CO.
2430-J 4TH AVE.
ROTH PUMPS
ROCK ISLAND ILLINOIS

Condensate Return Units | Boiler Feed Units | Turbine Type Pumps | Cellar Drainers

BREVITY—Identify by IEN - 10756 if you write the maker

MORE USES for

**ROYALITE PONY TRICYCLE FIXTURES**—This exciting, new, drawformed Royalite pony head and saddle add new glamour to children's tricycles. Developed in Royalite and fabricated by Regal Plastic Co., Kansas City, Mo., for Texas Bronc Mfg. Co.

**ROYALITE SHELL CHAIR** Fabricated by Lensol Wells Co., Los Angeles, Calif., this smart, unique, chair proves Royalite's contribution to greater freedom of design. It was selected by The Museum of Modern Art for current showing at the "Good Design" exhibit in Chicago.

SEE NEXT PAGE FOR LIST OF U. S. ROYALITE FABRICATORS →

U.S. Royalite®
STANDARD OR FLAME RESISTANT

*The engineering staff of United States Rubber Company will be glad to work with you or advise you on any application of Royalite you may suggest.*

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

▼ BREVITY—Identify by IEN - 10758 if you write the maker ▼

# Kester Solder

Kester's famous group of flux-core solders consist of over 100,000 different types and sizes.

## Uniform · Efficient

Kester flux-core solders are made only from the finest grades of tin and lead commercially available.

**KESTER SOLDER COMPANY**
4201 Wrightwood Ave., Chicago 39
Newark, New Jersey
Brantford, Canada

*Send for free manual: "SOLDER and Soldering Technique"*

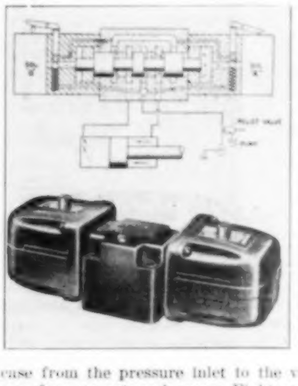
KESTER SOLDER

Standard for Industry since 1899

▼ BREVITY—Identify by IEN - 10761 if you write the maker ▼

## VALVE . . Four way hydraulic, solenoid pilot actuated, system pressure

**Source: DENISON ENGINEERING CO.**
**1158-62 Dublin Road, Columbus 16, Ohio**



**Solenoids** mounted at the ends of the illustrated new ¾-in. sub-plate type of four-way valve operate ball-type spring-backed pilot valves. They admit and exhaust system pressure in connection with pistons assembled in cylinders at the two ends of the main valve spool. Two designs, both available with single and double solenoid-valve assemblies, take the pilot pressure in one case from the pressure inlet to the valve and in the other case from an external source. Eight porting combinations are available with interchangeable spools. Operation is smooth, quick, positive under operating pressures to 5,000 pounds.

**Two sizes** are available for ¾ and 1½-in. connections, the ¾-in. double-solenoid assembly measuring 15¼-in. in overall length by 4¾-in. in width and 4-in. in height. The solenoids can be specified for operation on 110, 220 or 440-volt 50 or 60-cycle ac. Rated capacity through the main flow ports is 20 gpm. at 20 ft. per second.

▼ BREVITY—Identify by IEN - 10764 if you write the maker ▼

# FASTER, EASIER DRAFTING

### 40% faster—actual tests prove

When you eliminate time wasted in picking up and laying down tools, you naturally draft faster, easier. Up to 40% faster if you're using a Bruning machine (as proved by actual tests).

Your Bruning drafter combines triangles, T-square, straightedge, protractor and scales, all in one precision instrument. Waste motions are cut to the bone — accuracy becomes both easy and *automatic*.

Other exclusive Bruning features naturally contribute: Touch Control Indexing, for example; or our "Equipoise" mechanism (the best gravity compensator ever devised for inclined board use). Get the details in our interesting descriptive booklet.

***SEND TODAY*** for our free 20-page booklet A-1055. Use it as your standard of drafting machine values.

**BRUNING**

**CHARLES BRUNING COMPANY, INC.**
Dept. H-101A, 100 Reade Street, New York 13, New York

▼ BREVITY—Identify by IEN - 10759 if you write the maker ▼

# remarkable U. S. Royalite!

## The Versatile Thermoplastic with 1,000 Applications

**ROYALITE IN THE TOY INDUSTRY**—Children are tough on toys—but Royalite can take it! For Royalite is the ideal material when abuse from active children is an important factor.

Warm and pleasant to the touch, it will *not* splinter, warp, or shatter. It has no dangerous, sharp edges. It is highly resistant to impact. Its colors are everlasting. And it can be formed on standard equipment with conventional techniques.

**ROYALITE IN THE FURNITURE INDUSTRY**—Royalite gives designers greater freedom than conventional materials—allows them to use flowing sweeps and curves.

In a rainbow of everlasting colors, lightweight, waterproof and stainproof, easy-to-clean Royalite is the perfect answer to numerous materials problems in the furniture field today. Royalite, although light, is remarkably tough and highly resistant to impact. Designed for complete pieces or decorative inlays, it is easily formed; remains non-warping, non-corrosive for life.

U.S. Royalite — STANDARD OR FLAME RESISTANT

**CONSULT THESE EXPERIENCED FABRICATORS OF ROYALITE**

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General Plastics Corp., 723 W. Broadway, Glendale 4
Engineering Plastics Co., 1475 El Mirador Dr., Pasadena 3
National Plastics Industries, 425 Divisadero St., San Francisco
Hollywood Plastic Arts, 503 W. Olympic Blvd., Los Angeles 15
Swedlow Plastics Co., 5527 District Blvd., Los Angeles 22
Westwood Craftsmen, Inc., 2043-45 Pontius Ave., Los Angeles 25
Associated Mfg. Co., 541 S. Fair Oaks Ave., Pasadena 2

**COLORADO**
Pikes Peak Plastic, 5 W. Cucharras St., Colorado Springs
Denver Plastics, Inc., 260 S. Dale Court, Denver 9

**FLORIDA**
Plastics Design & Mfg. Company, Box 61, Tallahassee

**GEORGIA**
Gladwin Plastics, 542 Courtland St., N.E., Atlanta

**ILLINOIS**
Arrow Plastic, 1539 N. Throop St., Chicago 22
Associated Plastics Fabricators, 164 N. May St., Chicago 7
L. A. Goodman Mfg. Co., 131-145 W. 63rd St., Chicago 21
Laidman-Krispin Co., 1308 N. Halsted St., Chicago 22
Cortland Industries, Inc., 4545 W. Cortland Street, Chicago 39
Neo Products Co., 2534-38 S. Kedzie Ave., Chicago 23
O-Lin Products, 3755 Kedzie Avenue, Chicago 18
Precision Plastic Products Inc., 628 W. Lake St., Chicago 6

**MARYLAND**
Fawn Plastics Co., 2902 Hamilton Ave., Baltimore 14

**MICHIGAN**
Cadillac Plastic Co., 651 W. Baltimore, Detroit 2
Imperial Industries, 4435 Waller Ave., Wayne
Kiler Mfg. Co., 50 Cottage Grove S.W., Grand Rapids 2
Reynolds Plastics, Inc., 3445 W. Firth St., Detroit
Fabri-Kal, 242 East Kalamazoo Avenue, Kalamazoo
Woodall Industries Inc., 7565 E. McNichols Rd., Detroit 34

**MINNESOTA**
T. O. Plastics, 58th & Longfellow, Minneapolis
Plastics, Inc., Chestnut & Ryan Sts., St. Paul 2
Upper Midwest Mfg. Co., 1717 Fourth Ave. S., Minneapolis 4

**MISSOURI**
Dwinell Co., 1511-25 W. 9th St., Kansas City 7
Getter Plastic Co., 308-10 S. Eighth St., St. Louis 2
Regal Plastic Co., 710 Main St., Kansas City

**NEBRASKA**
Omaha Plastics Co., 1470 S. 13th St., Omaha 9

**NEW JERSEY**
Sillcocks-Miller Co., 10 W. Parker Ave., Maplewood
Stoller Molded Products, Inc., Taylor St. at Webster, Trenton 4
Thermaplte Co., 220 Jefferson St., Newark 5
Van Beek Industries, 25 Park St., Orange

**NEW YORK**
Bassons Molded Products, 1424 W. Farms Rd., New York 60
Copeland Displays, Inc., 537 W. 53rd St., New York 19
Curbell Inc., 1700 Elmwood Ave., Buffalo 7
Crystal Plastics, Inc., 232-252 Taaffe Place, Brooklyn 5
Dual Fabricators Corp., 808 Driggs Ave., Brooklyn 11
Dura Plastics Inc., 1 W. 34th St., New York 1
Durable Formed Products, Inc., 329 Canal St., New York 13
Mastercraft Plastics Co., Inc., 95-32 150th St., Jamaica 4
Steiner Plastics Mfg. Co., Inc., Pratt Oval, Glen Cove, Long Island

**OHIO**
Fabri-Form Co., Box 36, Cambridge
The Baxter Company, 15 E. 2nd Street, Cincinnati

**PENNSYLVANIA**
Balen Mfg. Co., 5919 Webster St., Philadelphia
Lee Plastics, A and Lippincott St., Philadelphia 34
Pearson-Berlinghof, Inc., 18 North State Street, Newton
The Bell Plastics Co., Inc., 600 Heinz Street, Pittsburgh 12

**TENNESSEE**
Plasti-Line, Inc., Jacksboro & Broadway, Knoxville 18

**TEXAS**
Plastic Engineering Co., 2101 69th St., Houston 11
Plastic Products of Texas, 1400 Cedar Springs, Dallas

**WASHINGTON**
K. B. Plastics, Inc., 6 So. 4th Ave., Yakima
Mason Plastics Company, 1121 Westlake North, Seattle

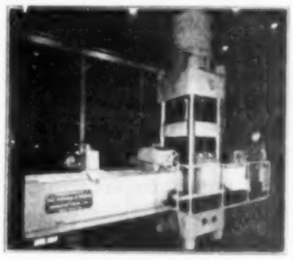
**WISCONSIN**
Bailey Co., 3530 W. Pierce St., Milwaukee 15

**The United States Rubber Company at 2638 North Pulaski Road, Chicago, Illinois, has complete Engineering, Designing, and Styling Departments to assist fabricators on the technique to employ, and in the art of fabricating most efficiently with ROYALITE.**

▼ BREVITY—Identify by IEN - 10762 if you write the maker ▼

## STRAIGHTENING . . Hydraulic press rates 1,500 ton, for forged gun barrels

**Source: HYDRAULIC PRESS MFG. CO.**
**751 Marion Road, Mount Gilead, Ohio**



**The main ram** with its motor-driven hydraulic-pressure equipment, moving platen, support columns and bottom head in this new hydraulic straightening press are assembled as a unit to ride on wheels on the 336 by 36-in. press bed. Traverse is by a 3-hp. motor and speed reducer. Control centers at a manual limit switch for positioning movement at 120 ipm. in either direction.

**A work piece** rests upon two heads, also movable on top of the bed. Beyond each of these heads are auxiliary heads containing roller stands with which the work can be rotated by application of hydraulic pressure from a separate radial-piston pump. The bed is designed for full load on 96-in. centers.

**Maximum** opening between the bed and the 12 by 14-in. ram facing measures 39 inches. Ram movement measures 18 inches. Traverse of the pressure head over the bed is 204 inches. The ram closes at 40 ipm., changes to pressing speed at 1.2 ipm. upon meeting resistance and retracts at 40 ipm.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

▼ BREVITY—Identify by IEN - 10765 if you write the maker ▼

# Solve your Extrusion Problems

with "HAYNES" Alloy Dies
Trade-Mark

HAYNES alloys are the standard die material for extruding such highly abrasive matter as manganese dioxide and carbon for battery mix. They have also been the only die material that could stand the corrosive attack during hot extrusion of vinyl-chloride plastics.

Some of the HAYNES alloys have Rockwell C hardness as high as 62 and exceptionally low frictional coefficients. Among various special properties, other HAYNES alloys have especially good resistance to acids and salts—even at high temperatures.

For further information about HAYNES alloy dies, write to our general offices in Kokomo, Indiana.

**Haynes Stellite Company**
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes" is a trade-mark of Union Carbide and Carbon Corporation.

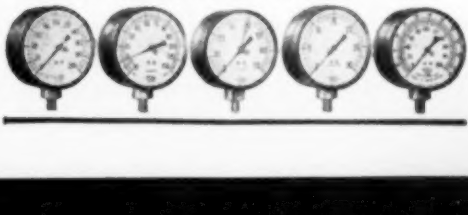
▼ BREVITY—Identify by IEN - 10763 if you write the maker ▼

# the right answer

## . . . to every gauge need IN THIS NEW CATALOG

The right answer—the Marsh answer — to every pressure gauge need is described by this new Marsh catalog which covers hundreds of variations of styles, types, mountings, ranges, functions. Remember that Marsh gauges, from the "Standard" series line to the heavy-duty "Mastergauge" series have proved across the years to be the most economical you can buy for a given set of conditions. Let us prove this in terms of gauges for your product.

**MARSH INSTRUMENT CO.**
Sales affiliate of
Jas. P. Marsh Corp., Dept. A, Skokie, Ill.



▼ BREVITY—Identify by IEN - 10766 if you write the maker ▼

**FLOOR SCALES**

Now—Toledo Floor Scales with new recessed frame design which fully guards against foreign material lodging beneath platform edge—choice of full or semi frame, with economical conversion for future needs. Double parallel link platform suspension means long life, accurate dependability. Send for bulletin 2406C. Toledo Scale Company, Toledo 1, Ohio.

# TOLEDO

**HEADQUARTERS FOR SCALES**

BREVITY—Identify by IEN - 10767 if you write the maker

FOR THESE *Extras*

LONGER SERVICE

LESS MAINTENANCE

HIGHER PERFORMANCE

use STAINLESS STEEL

# FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

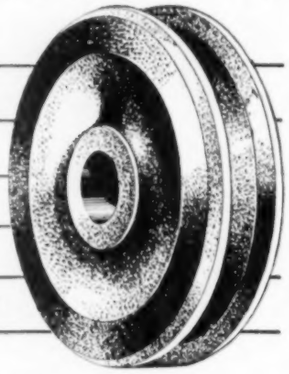
WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

**CHICAGO FLOAT WORKS, INC.**
**2326 S. Western Ave., Chicago 8, Illinois**

BREVITY—Identify by IEN - 10768 if you write the maker

WROUGHT STEEL CRANE WHEELS by STANDARD



Built for *extra* service by a pioneer producer of railroad wheels, under continuous quality-control from melting of metal to final finishing. Rugged, tough, strong, durable. Available in a range of sizes. Prices on request.

**BALDWIN-LIMA-HAMILTON CORPORATION**
**PHILADELPHIA 42, PA.**

*Offices:* Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

## BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 10769 if you write the maker

## Here's what you get with NUGENT FILTERS for fuel and lube oil

- More filtering area
- More effective filtering
- Choice of full flow or by pass filtering
- Choice of inexpensive recharges
- Simple piping
- Capacities to meet every need

NUGENT Absorbent Type Fuel and Lubricating Oil Filters pay off for you in many ways—they conserve your oil . . . they extend the life and improve the service you get from your equipment . . . they are available at the lowest over all cost per square inch of filtering area. Add to these such additional advantages as ease of installation, economy of recharging and high filtering efficiency and you'll see why we say you can't afford to be without Nugent Filters.

Write today for descriptive literature outlining the nature of your filtering problems. It's the first important step towards big savings.

**Wm. W. *Nugent* & Co., Inc.**
418 N. Hermitage Ave. CHICAGO, 22, ILLINOIS

Est. 1897

**Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities***

BREVITY—Identify by IEN - 10770 if you write the maker

## BUILDINGS . . Steel roof deck, flat corrugations on 5¾ in. centers

Source: GRANCO STEEL PRODUCTS CO.
851 Thomas St., Dept. Drl, Granite City, Ill.

**Steel sheet** is formed on a rotary corrugator in manufacture of this new roof deck to present flat corrugations on 5¾-in. centers to a total center-to-center width measurement of 28¾ in. per panel. Corrugation depth measures 1⅝ inches. Overall length is maximum at 172 inches.

**The deck** is intended for general use and is supplied with a rust-inhibitive alkyd-resin pain baked in place. The paint serves as a reflective permanent finish or as a primer for additional finish to be placed in the field.

BREVITY—Identify by IEN - 10771 if you write the maker

## PRINTING . . Sensitized paper reproduces blueprints, negative originals

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.

**Rolls, cut sheets to 44 in. width**

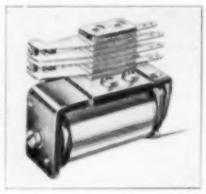
**Repro-Negative** is a new silver-sensitized photographic reproduction paper. It makes black-on-white photographic intermediates directly from blueprints and other negative originals without need for dark-room handling or special reproduction equipment. The paper can be exposed on standard equipment in ordinary room light. It is processed with standard photographic chemicals in manner similar to the company's Autopositive Paper previously described IEN-12969-49.

**It prints** a positive from a negative or vice-versa. It can be used to reproduce any type of negative line original, old or new, in good condition or poor. Black lines show on an evenly translucent thin durable paper base to make an intermediate that will print back at uniform practical speed and will stand up under repeated use into the hundreds.

BREVITY—Identify by IEN - 10772 if you write the maker

## RELAY . . Multiple contact unit mounts maximum of eight contact springs

Source: C. P. CLARE & CO.
4717-21 W. Sunnyside Ave., Chicago 30, Ill.



**Type KX** is a new assembly in the company's line of sensitive control-circuit relays with a coil that can be wound to a maximum resistance of 8,000 ohms. The relay measures about 1⅝ in. in length, 1 in. in width, 1½ in. in height and weighs about 2 ounces. The coil can be single or double wound to 175-volt dc.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10773 if you write the maker

**NOW . . . live rubber added to INCREASE STRENGTH 200%**

TAMP LEVEL... *and use it!*

# *IMMEDIATE-SET*
## FLOOR PATCH

The highly resilient, "fighting-back" quality of rubber triples the resistance of IMMEDIATE-SET to point loads, impact and shock. At sub-freezing temperatures the increase is much greater. For inside or outside use.

This is an entirely new idea. Results are amazing. Try it and be convinced.

**WRITE FOR COMPLETE DATA TODAY**

**FLASH-STONE CO.**
INCORPORATED
36 E. RITTENHOUSE STREET
PHILADELPHIA 44, PA.

BREVITY—Identify by IEN - 10774 if you write the maker

## ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

*Write for Circular*

**Safety BELT-LACER CO.**
5394 N. Menard Ave.
Chicago 30, U. S. A.

BREVITY—Identify by IEN - 10775 if you write the maker

**Monarch *CURED-ON* Tires**

## Soft Touch for Floors

Monarch Tires will save you plenty of money on floor maintenance. Monarch-equipped hand trucks and carts pussy-foot easily over your floors, never groove or chip floor surfaces. Monarch Tires are easy on manpower, too—take bumps smoothly, soak up shock, make casters swivel easily. Be sure the vehicles you buy are equipped with Monarch Tires. Available in oil-resistant synthetics.

*The leading manufacturers of industrial vehicles, both hand and powered, use Monarch Tires as original equipment. Replacements available through the manufacturer of your equipment.*

THE MONARCH RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

***SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS***

BREVITY—Identify by IEN - 10777 if you write the maker

NO MORE CARBON SCRAPING

Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like..

U.S. PAT. #2310842*
GUNK DUNK BENCH Carburetor and Parts Cleaning Kit. New 5½ gal. size deep "Vapor-catcher" design pail.

New—Improved—
More Potent*
GUNK HYDRO-SEAL

A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation—and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

*1. Faster . . . Terrific penetration . . . new improved odor.
2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works hot or cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
— Flatly Refuse Substitute Imitations —

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE MASS.

BREVITY—Identify by IEN - 10778 if you write the maker

# ELIMINATES COSTLY MILLING OPERATION ON SPLIT RINGS

ECONOMICAL DoALL BAND MACHINING DOES JOB IN 1/3 THE TIME, FREES MILLING MACHINE FOR OTHER WORK

**BAND MACHINING CAN DO 100's OF JOBS FASTER, AT LOWER COST**

DoALL Band Machines cut *continuously* — they slice the material apart, instead of reducing it to a pile of chips. They are fast, they are versatile, they are easy to use. There are DoALL Band Tools for every cutting, filing, grinding, honing and polishing job.

ASK Gates City Iron Works, Omaha, Nebraska, about the DoALL Contour-matic Band Machine! They were cutting split rings from ¼" cold rolled steel coils on an expensive milling machine. A DoALL MP-20 slashed time for the job by two-thirds and released the milling machine for other work.

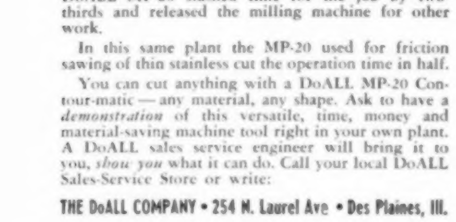
In this same plant the MP-20 used for friction sawing of thin stainless cut the operation time in half.

You can cut anything with a DoALL MP-20 Contour-matic — any material, any shape. Ask to have a *demonstration* of this versatile, time, money and material-saving machine tool right in your own plant. A DoALL sales service engineer will bring it to you, *show you* what it can do. Call your local DoALL Sales-Service Store or write:

THE DoALL COMPANY • 254 N. Laurel Ave • Des Plaines, Ill.

27 SALES-SERVICE STORES — DoALL — INDUSTRY'S NEW TOOLS

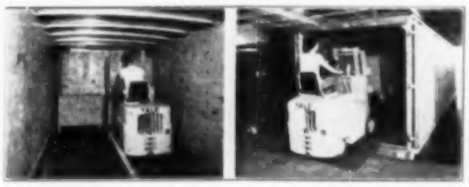
B-1R




BREVITY—Identify by IEN - 10780 if you write the maker

## TRUCK . . Engine driven fork lift, to load and unload motor vehicle trucks

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.



**Trucker** trade names a new series of five engine-driven fork lift trucks. All are based on a single design employing a four-cylinder gasoline engine, rating 18 hp. at 2,500 rpm., and a direct-connected hydraulic pump providing pressure for the elevating and tilt movements. Wheel base is 38½ inches. Width is 33½ inches. Height is 60 in. with the telescopic upright in lowered position.

**The truck** will turn in 57-in. intersecting aisles when equipped with 36-in. forks. Lift is 30 to 40 fpm. at a rated load. Lowering is 70 to 75 fpm. free. Two-speed travel shift is maximum at 7½ mph. under governor control. Load ratings are 1000, 1,500, 2,000 lb. based on a 24-in. load center.

**All three sizes** are available with a Simplex hydraulic lift in which the telescopic uprights start upward after the forks have risen to 13 in. above the floor. Maximum lift height is 108 inches. The 1,000 and 1,500-lb. trucks also are available with a Duplex hydraulic lift in which the forks can be moved upward to 54 in. above the floor before the telescoping uprights start up also. These trucks can be employed to double-pile loads into roofed automotive trucks.

**Bulletins 1306 to 1311**, 4 pages each, present illustrated description, dimension and range drawings, specifications.

BREVITY—Identify by IEN - 10781 if you write the maker

## CONVEYING . . Metal rod assembly rides straight runs and around curves

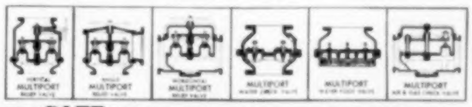
Source: STEEL PRODUCTS FABRICATORS
12030-34 S. Emerald Ave., Chicago 28, Ill.

**Erko Powerturn** is a new metal-rod conveyor in which non-rotating rods are fitted with roller-bearing rolls at both ends to ride in channels. The bars are linked, also at both ends, by a flexible chain made of hardened steel plates. Drive is by sprockets engaging the bars. For a straight run the sprockets on the two sides are the same size.

**The sprockets** on the outside are larger than those on the inside of a curve by the amount required to make the greater length on the outside. Curve sections are available in any turn from 45 to 180 degrees on a 36-in. inside radius. Conveyor width ranges from 1 to 3 feet. Load rating is subject to specification. The conveyor can be installed for horizontal or for incline operation to a maximum of 15 deg. with horizontal.

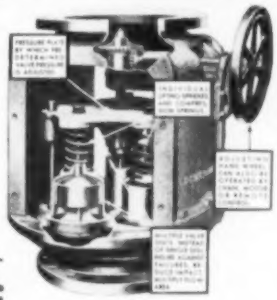
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10782 if you write the maker




THE SAFE, TIGHT, QUIET MULTIPORT RELIEF VALVE

What Owners say about Cochrane MULTIPORT VALVES



Over 15,000 Cochrane Multiport Valves in Service NOT ONE KNOWN FAILURE

Cochrane Corporation
3152 N. 17th Street, Philadelphia 32, Pa.
Please send me a copy of Cochrane Publication 4150 on Cochrane Multiport Valve.
Name
Firm
Address
City Zone State

BREVITY—Identify by IEN - 10783 if you write the maker

Users Tell Our Story Best!
163 ORDERS
FROM 3 CUSTOMERS ALONE...TOTALED
1,421,402 LBS.

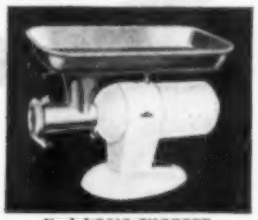
SPEED PATCH
WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!
Think of it . . . just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

BREVITY—Identify by IEN - 10784 if you write the maker

Cost-Chopper FOR INDUSTRIAL CAFETERIAS



THE RIGHT CHOPPER
With ten models to choose from in the balanced U. S. line you can get the chopper that's exactly right for your needs.

MAKES TASTIER MEAT
Precision-built and correctly engineered, these choppers cut cleanly without mashing or heating meat. Meat fresh-cut this way in your own kitchen looks, keeps and tastes better.

Model 2512 CHOPPER
Modern Enterprise design. Smooth, easy-to-clean. Juicer-Puree attachment available at small extra cost to make tomato juice, apple sauce, sweet potato and strained vegetables and fruits of all kinds. Quality construction assures long life.

U.S. BERKEL — Write for Illustrated Literature on Slicers • Choppers • Meat Saws • Tendersteak Machines

U. S. SLICING MACHINE COMPANY, INC.
1001 Berkel Building, La Porte, Indiana

BREVITY—Identify by IEN - 10785 if you write the maker

Commemorating our 60th Anniversary
THE POWERS REGULATOR COMPANY

New Factory and General Office Building: 3400 Oakton Street, Skokie, Ill.

World's Most Modern Factory Producing Automatic Temperature and Humidity Control

. . . to meet the greatly increased demand for Powers products and to give you better controls, better deliveries and better values . . . these advantages are possible with our large new plant and modern production facilities. With an enlarged engineering and production staff, plus 60 years experience in heating, ventilating, air conditioning and process control, we believe we can be of greater service than ever before to our many friends who have contributed to our success

WILLIAM PENN POWERS
. . with his invention of the first all pneumatic system of temperature control and gradual acting vapor disc thermostat made an invaluable contribution to the modern science of heating, air conditioning and industrial process control.

POWERS CONTROL 60th

Offices in Over 50 Cities. See Your Phone Book.

BREVITY—Identify by IEN - 10786 if you write the maker

## FOR QUICK STARTS

In steam heated processes, output is increased if air is vented from the steam space.

The *rapid* removal of both large volumes of air and condensate are features of the

## SARCO THERMOSTATIC STEAM TRAP

The powerful thermostatic bellows permits the use of an OVER-SIZE orifice and this orifice is **WIDE OPEN** when the trap is cold.

No seats to change . . . regardless of steam pressure changes. Only one operating part . . . the dependable, one-piece thermostatic bellows made of phosphor bronze, monel or stainless steel.

For removing air and condensate from dryers, kettles, pans, cookers, etc., use Sarco No. 9.
Write for Catalog 252. 505

**SARCO** SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y.
SAVES STEAM SARCO CANADA, LTD., TORONTO 5, ONTARIO

BREVITY—Identify by IEN - 10787 if you write the maker

## *Theyre See Worthy*

## PIC

### STEEL UNIONS Look Well . . . Wear Well on Original Equipment

100% Zinc Plated . . . good looking . . . strong, the Pic 150# steel union is "tailor-made" for makers of original equipment. Ends are uniformly flat-sided for faster installing with open-end wrenches. They can take severe wrenching because they're made from steel pipe coupling stock. Special wedge-type bronze seat locks the union tight — the complete zinc plating (threads too) provides secure protection from rust. Best of all — a Pic costs *less* than a galvanized, *no more* than a black malleable union.

*Write for Free Samples!*

**DART UNION COMPANY**
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 10788 if you write the maker

*Buck* AJUST-TRU CHUCKS

## .0005 PRECISION

## *In 1 MINUTE!*

*Fastest chuck in the world!*

Saves fooling around adjusting the grip of four jaws . . . cellophane shims . . . "springing". Keeps the same .0005 precision chucking duplicate parts *with scroll chuck speed.*

6" 6-jaw Buck *handles the work of 93 collets* — yet it's priced in line with ordinary chucks!

Those are just some of the features of this new kind of chuck. They are unbelievable—but TRUE! Send for literature —see for yourself!

**BUCK TOOL COMPANY**
1016 Schippers Lane Kalamazoo, Mich.

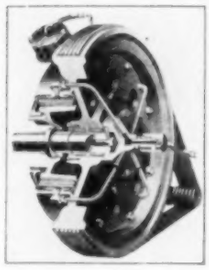
**NOTHING LIKE IT!**

This is the first and only successful dual control chuck. Its operation is easy to understand and use. One pin on (see center of chuck body above) moves jaws in or out to grip work—just like any scroll chuck. 4 opposed screws (only two can be seen in photo) work on the chuck adapter to bring work to dead center. Even dubs have centered work within .0005 in 5 minutes! Once set dead true, hundreds of duplicate parts can be machined without changing adjustment—by simply using the scroll control.

BREVITY—Identify by IEN - 10789 if you write the maker

## DRIVE . . Pneumatic clutch brake primarily for company's power presses

Source: SALES SERVICE MACHINE CO.
2361-65 University Ave., St. Paul 4, Minn.



**Airflex** pneumatic clutch with contracting friction facing and a contracting-band friction-faced brake are now available to assemble on the flywheel and crankshaft of the company's 30-ton and 85-ton presses. The combination provides for interlocked operation in starting and stopping the press in service.

**Air** pressure admitted through a fitting mounted on the outboard end of the crankshaft applies pressure in the pneumatic tube forming the operating element in the clutch to connect the freely rotating flywheel to the crank-driving flange. Air admitted to engage the clutch is also employed in a cylinder to disengage the brake band against its spring action. When pressure is released from the clutch it also is released from the brake cylinder and the brake is spring engaged to shut down operation.

**Any failure** in air pressure will result in the press stopping and the brake engaging. Required pressure from a shop line is between 40 and 80 lb. for normal operation with 25 lb. the minimum at which the clutch can be operated. The flywheel rides on sealed and factory-lubricated roller bearings.

BREVITY—Identify by IEN - 10790 if you write the maker

## TRUCK . . Pneumatic tired, fork lift, engine drive, 1 ton load

Source: BUDA CO.
15401 S. Commercial St., Harvey, Ill.

**Model FPB20** is new companion design to the Model FB20 power-lift fork truck, previously described IEN-950-51. The new unit is equipped with pneumatic tires rather than solid rubber for services where this additional cushioning action is desirable. As in the Model FB20, drive is by a four-cylinder Waukesha gasoline engine rating 8 hp. at 2,775 rpm. Five standard masts, back of the fork assembly, are available for lifts of 72 to 120 inches.

**Lift speed** with a capacity load is at 44 fpm. Travel speeds are 5½ mph. in low gear and 8½ mph. in high gear in both forward and reverse directions. Overall length is about 67 in. without the forks. Overall width is 35 inches. The truck will operate in 57-in. intersecting aisles with the 30-in. fork length. The drive includes a 9¼-in. clutch that can be replaced in about 30 minutes without removing the transmission. Illustrated details, outline drawings and specifications are contained in 4-page Bulletin 1550.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10791 if you write the maker

## PRODUCT FINISHING MADE PROFITABLE

Eliminate slow, tedious, outmoded methods of color-finishing of metal, plastic, glass, ceramic, wood, rubber and other products . . . use snug-fitting Matthews "Contour" Spray Masks. Intricate color schemes are applied in a few seconds by unskilled workmen.

You'll receive increased production, cost savings and uniform finishing, resulting in greater profits . . . when you use Matthews Masks. Write today for complete information and literature.

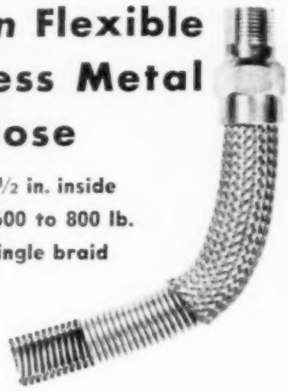
GET YOUR PROFITS FROM

## BEHIND THE MASK

**JAS. H. MATTHEWS & CO.**
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

BREVITY—Identify by IEN - 10792 if you write the maker

## Johnson Flexible Seamless Metal Hose



**¼ to 1½ in. inside**
**Rates 2,600 to 800 lb.**
**with single braid**

Ask for Bulletin J-2

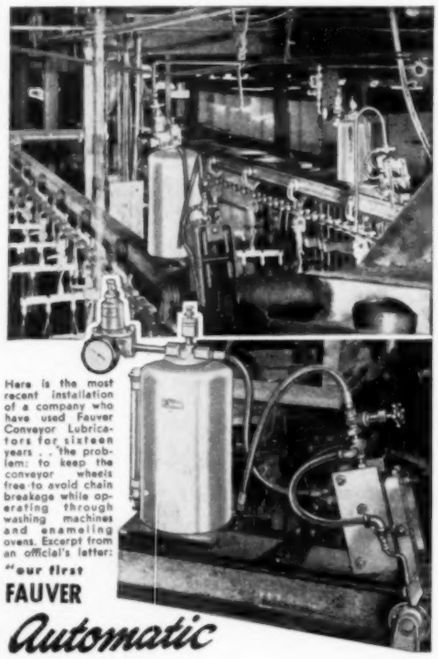
Deep convolutions provide for extreme flexibility.

Made of brass, bronze, carbon steel, stainless steel alloys.

Standard or special fittings available for hot or cold service.

**JOHNSON METAL HOSE INC.**
P. O. Box 952 Waterbury 20, Conn.

BREVITY—Identify by IEN - 10793 if you write the maker



Here is the most recent installation of a company who have used Fauver Conveyor Lubricators for sixteen years . . the problem: to keep the conveyor wheels free to avoid chain breakage while operating through washing machines and enameling ovens. Excerpt from an official's letter:

"our first FAUVER *Automatic*

## CONVEYOR LUBRICATOR was installed in 1934" . . .

"the conveyor is 3700 feet long and goes through enamel ovens, so lubrication was a serious problem. Several types of lubricators were tried without success. We resorted to manual application of oil which was an expensive item. This was necessary because when a sufficient number of wheels froze, the chain would break, meaning a cessation of production . . . This Automatic Trolley Lubricator now keeps the wheels well oiled, the oil is applied in a mist so that it does not get on the enameled work and those former mechanical troubles are eliminated" . . . there are

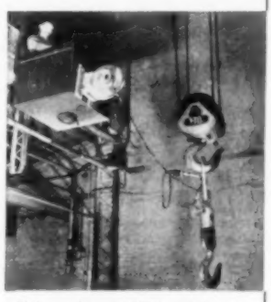
***also*** **FAUVER AUTOMATIC GREASE Lubricators driven by contact with the trolley wheels; operates on wheels equipped with or without Grease fittings—we specialize in conveyor lubrication problems—send for complete information**

**J. N. FAUVER** *COMPANY, INC.*
47 W. Hancock DETROIT 1.

BREVITY—Identify by IEN - 10795 if you write the maker

## The New Ametron Electronic Scale weighs by *electronics*

- ELECTRIC LOAD CELLS
- REMOTE INDICATION
- PRINTING RECORDERS
- LOW MAINTENANCE



Picture shows 10,000 pounds capacity crane electronic scale used in shipping department of Harnischfeger Corporation, West Allis, Wisconsin.

*Write for illustrated circular* "The Way to Weigh"

**STREETER-AMET COMPANY**
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 10796 if you write the maker

## We may KNOCK YOUR HAT OFF

with our Quote on SAVINGS and DELIVERY

### If you're a Big User of Tiny Parts Such as These!

Sound like exaggeration? Not when you know the electronic tube industry looks to The Bead Chain Mfg. Co. for its millions of radio tube pins. Or, that builders of electrical apparatus turn to us for the contact pins, terminals, jacks and sleeves required in tremendous quantities.

**PARTS FOR MANY MECHANICAL USES, TOO**

For pin-like parts, and variations of bushings needed for *mechanical* purposes, as well, we are the money-saving supplier to scores of makers of toys, business machines, appliances, ventilators, etc.

**You Save . . . If we can make it!** We can almost say with certainty that if we can make that part you use in large quantities, we can show you a big saving.

**Nobody has What We Have!** To produce Bead Chain to sell for pennies per yard, we had to develop *our own Multi-Swage Method.* Instead of turning and drilling parts, or stamping and forming them, our Multi-Swage Method automatically swages them from flat stock into precision tubular forms, with tight seams. By increasing the production rate many times and eliminating scrap, this saves a large part of the cost by other methods.

**What We Can Make.** Parts may be beaded, grooved, shouldered, of most any metal. Generally, should not exceed ¼" dia. or 1½" length. *Standard Items* available in small quantity. *Special Designs* must usually be ordered in lots of a half-million or more, unless frequently reordered.

**Get Catalog and Cost Comparison.** Send blueprint or sample and quantity requirements. Or write for Catalog-Data folder. The Bead Chain Mfg. Co., 59 Mountain Grove St., Bridgeport, Conn.

Let **BEAD CHAIN** make it by
**MULTI-SWAGE METHOD**

BREVITY—Identify by IEN - 10798 if you write the maker

## STAPLING . . Wire feed spool applies on any standard machine

Source: INLAND WIRE PRODUCTS CO.
3945-49 S. Lowe Ave., Chicago 9, Ill.

**This new spool** and its mounting bracket are designed to assemble on any standard stapling machine that makes and drives staples from a continuous wire supply. The spool is equipped with a removable flange so a 25-lb. coil of wire can be slipped into position and the wire threaded through the guides at the front to the stapling head. A brake mechanism within the spool controls feed movement against slack or over-run. The guide holds the wire in line.

BREVITY—Identify by IEN - 10799 if you write the maker

## GAGE . . Flexible steel rule, 6, 8, 10 ft. lengths in steel case

Source: STANLEY TOOLS
478-82 Myrtle St., New Britain, Conn.

**Black numerals** and graduations stand out clearly on the white enamel face of this new ½-in. nickel-plated steel push-pull rule. The replaceable blade is graduated in 16ths for its entire length and in 32nds for the first 12 in. on the upper edge. It is rigid for measuring straight dimensions, flexible for circular and angular surfaces. On inside measurement 2 in. are added to the reading on the rule for the case. List price is about $1 to $1.50.

BREVITY—Identify by IEN - 10800 if you write the maker

## WELDING . . Variable resistor plugs in to control arc weld circuit

Source: MULLENBACH ELECTRICAL MFG. CO.
2302 E. 27th St., Dept. I, Los Angeles 58, Calif.

**Arctrol** is a new foot-operated variable resistor assembled in a metal stand and equipped with a length of extension cord. It plugs into the circuit on most dc. arc-welding machines and certain types of ac. machines. By depressing the pedal the arc voltage can be decreased from any predetermined amount previously set at the machine's own voltage control. It is possible for the welder to vary voltage to suit given requirements at any moment for satisfactory operation at maximum speed.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10801 if you write the maker

## For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

**SIMMONS FASTENERS**
SPRING-LOCK • QUICK-LOCK • ROTO-LOCK
SIMMONS FASTENER CORP., 1758 N. Broadway, Albany, N. Y.

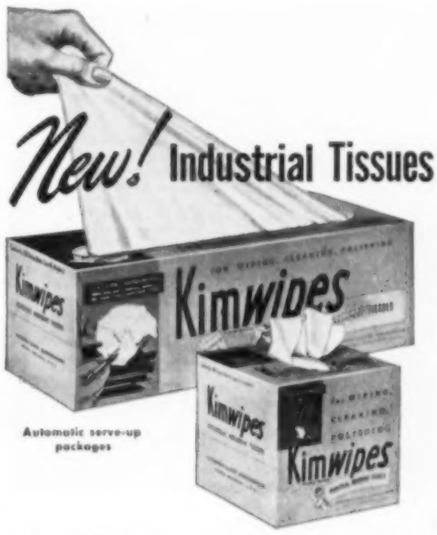
BREVITY—Identify by IEN - 10802 if you write the maker

Universal Drill Bushings with superhoned bores have been the first choice of industry since the founder of Universal Engineering Co. originated standard drill bushings nearly 30 years ago. Available in standard and special sizes to speed and simplify your jig drilling at greatly reduced tool breakage costs. Complete stock of standard bushings available for immediate shipment. Write for complete information.

**UNIVERSAL ENGINEERING CO.**
FRANKENMUTH 5, MICHIGAN

BREVITY—Identify by IEN - 10803 if you write the maker

## *New!* Industrial Tissues




Automatic serve-up packages

## For Wiping and Polishing

Wiping precision instruments

Let clean, *disposable* KIMWIPES* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 18" in all Supply Centers under stock item #53P23121-800.

Polishing machined parts

**Kimwipes**
INDUSTRIAL WIPING TISSUES

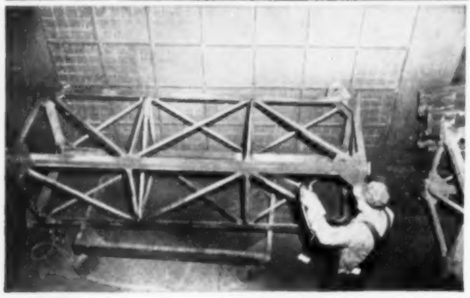
*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION, IEN-1051
Neenah, Wisconsin
Please send me Kimwipes literature.

*Name* .....
*Firm Name* .....
*Address* .....
*City* ..... *Zone* ..... *State* .....

▼ BREVITY—Identify by IEN - 10805 if you write the maker ▼

## WHO SAID PAINT OVERSPRAY REMOVAL WAS A PROBLEM?



**This RP Paint Arrestors Installation is Economical, Effective, Requires a Minimum of Floor Space.**

A wall of R-P Paint Arrestors and a blower solved the manufacturer's paint overspray removal problem in painting sections of structural steel in the installation above. Versatile R-P Paint Arrestors can be the economical solution for your plant, too.

**WRITE FOR FREE BOOKLET**

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

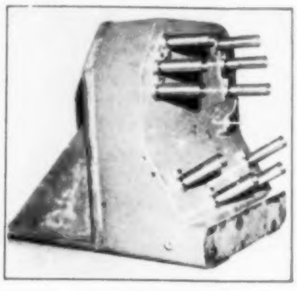
**RESEARCH PRODUCTS CORPORATION**
**Dept. IN Madison 10, Wisconsin**

**RP . . . PRODUCTS OF RESEARCH**


▼ BREVITY—Identify by IEN - 10808 if you write the maker ▼

## THREADING . . Motor driven head taps ten holes in an engine housing

Source: HOEFER MFG. CO.
211-15 S. Chicago Ave., Freeport, Ill.



**Four holes** are threaded with ¼-in. 20 taps and six are threaded $\frac{5}{16}$-in. 18 simultaneously with this new motor-driven head. The motor mounts at the rear of the head, rides with it on horizontal ways to working position. Each spindle carries a hardened section with threads ground from the solid in the same pitch as the tap. These threaded sections ride in bearing-bronze lead-screw nuts secured in the head.

**A cycle** includes forward feed to a positive stop where a limit switch closes the driving-motor circuit so the spindles start simultaneous rotation and forward feed into the work. A second limit switch governs "stop" and reverses the motor to back the spindles out of their holes to original retracted position at which point the drive motor stops. The complete head is then retracted ready for the next cycle. A pump supplies pressure lubrication to the moving parts in both directions of rotation. The spindles are assembled on anti-friction bearings in standard design.


▼ BREVITY—Identify by IEN - 10811 if you write the maker ▼

## Hanna AIR AND HYDRAULIC Cylinders AND Valves

*Here's Power and Control . . . for 101 uses*

YOU CAN SPEED PRODUCTION, cut costs and simplify the actuation and control of many of your machines and equipment by using the fast, smooth *power of Hanna Cylinders* with the *exacting control of Hanna Valves.*

Hanna Cylinders are available in low pressure models operated by air, oil or water up to 110 p.s.i. and in high pressure hydraulic types operating to 1500 p.s.i., in a range of mounting styles to meet all requirements. There is a complete line of Hanna Valves including hand, foot, solenoid and pilot operated, which provide a wide choice of control.

Send for Cylinder catalogs 236 and 233A and Valve Catalog 254.

**Hanna Engineering Works**

1748 Elston Avenue, Chicago 22, Illinois



▼ BREVITY—Identify by IEN - 10806 if you write the maker ▼

**AMERICAN-Standard**
**First in heating . first in plumbing**

## *The Sanistand*

### URINAL FOR WOMEN

***increases sanitation in factory wash rooms***
***reduces congestion during rest periods***

● Wherever the Sanistand fixture has been installed, reports from maintenance managers have definitely proved that this new urinal is ideal for installation in factory rest rooms. Because it is so sanitary, it reduces the amount of time needed for wash room maintenance, and its convenience speeds up use of rest rooms during rush hours. "Requires minimum of maintenance." "The units enable the rest room to handle more than twice the number of women in the same time." (Just two typical comments from the many received to date.)

And women, too, are enthusiastic about the Sanistand fixture. Nearly 90% of the 5,029 women who used it at test installations reported that they were pleased with the idea of a women's urinal . . . and felt that it was the greatest contribution to public sanitation since the development of water closets.

For additional information about this new fixture, see your plumbing contractor or send in the convenient coupon below. **American Radiator & Standard Sanitary Corporation,** Dept. IEN-10, Pittsburgh 30, Pa.

LOOK FOR THIS MARK OF MERIT

American Radiator & Standard Sanitary Corporation
Dept. IEN-10, Pittsburgh 30, Pa.
Please send me, without obligation, your new Better Rest Room Guide including complete information on the Sanistand fixture.
Name ........................
Firm ........................
Address ........................
City .................. State ..................

*Serving home and industry:* AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON


▼ BREVITY—Identify by IEN - 10809 if you write the maker ▼

## PHOTOGRAPHING . . Copying machine pictures area to 14 by 17 inches

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

**New design** of the company's Record Dexigraph, previously described IEN-4474-49, takes pre-cut paper and photographs documents at any reduction to 50 per cent of the original size on a continuous percentage scale. The new machine employs a new lens assembly smaller than the previous model for a sharp photographic image. The lens operates with a coated mirror and green fluorescent lamps to supply the copy illumination. As many as 150 exposures can be made in an hour by synchronized operation of an electric timer and solenoid shutter. Each exposure is recorded by a reset counter.

**The camera field** is maximum at 14 by 17 in. and prints can be made in sizes starting at 9¾ by 14 in. and grading down in five steps to 50 per cent of the original size. The record being photographed can be exposed as a unit or masked to picture only a desired portion. The machine will take Kardex or other visible record slides so information can be photographed in place. Mounting is on casters.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*


▼ BREVITY—Identify by IEN - 10810 if you write the maker ▼

LOW COST, ORGANIZED STORAGE SPACE

## 32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32
$11.95 F.O.B. AKRON
15⅜" high, 6" deep, 12½" wide

Drawers are 5¾" wide, deep, 2¾" 1¼" high

HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in radio, TV, photographic and ignition work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identify card drops into slot in drawer front.

Made in 6 sizes:

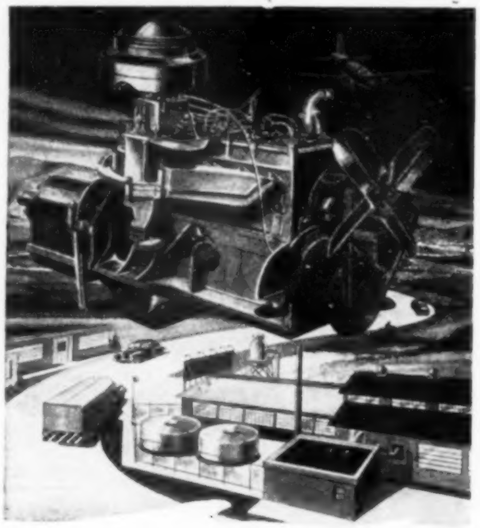
| | | | |
|---|---|---|---|
| J-64 | 64 drawer | (192 compartments) | $23.37 |
| J-32 | 32 drawer | (96 compartments) | 11.95 |
| J-24 | 24 drawer | (72 compartments) | 10.25 |
| J-16 | 16 drawer | (48 compartments) | 7.29 |
| J-12 | 12 drawer | (36 compartments) | 5.43 |
| J-8 | 8 drawer | (24 compartments) | 4.08 |

SEND FOR FREE DESCRIPTIVE FOLDER

**AKRO MILS, INC.** P.O. BOX 989 AKRON 9, OHIO



▼ BREVITY—Identify by IEN - 10812 if you write the maker ▼



## Oil and Gas Resistant Rubber Parts

Engineered to withstand petroleum products and their derivatives, rubber parts produced by STALWART are specified for applications in aircraft, automobiles, trucks, ships and railroad rolling stock.

STALWART can fabricate oil and gasoline resistant rubber parts having tensile strengths up to 2600 pounds p.s.i., durometer hardness from 45 to 95, and elongation ranging from 122 to 400 percent. In addition, these same stocks can be compounded to afford excellent resistance to weathering, abrasion, and temperatures (low and high).

STALWART can furnish precision rubber parts in production quantities to meet individual, S.A.E. and A.S.T.M. specifications as well as SB specifications under MIL-R-3065 (superseding ARMY 20-116A).

The urgency of maintaining continuous operation of both transportation and industrial facilities is becoming increasingly important, and STALWART is keeping pace with demands made upon rubber parts by developing better, longer lasting stocks.

Write today for the new 16-page catalog Number 51SR-1 for additional details.

OIL and GASOLINE RESISTANT STOCKS

| | Before Aging | | | After Aging: Normal | | | After Aging: In No. 3 Oil | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| 738 | 60 | [illegible] | [illegible] | 61 | 1288 | [illegible] | 80 | 1422 | [illegible] | [illegible] |
| 740 | 60 | 1558 | [illegible] | 66 | 1467 | 90 | 87 | 1499 | 87 | 7.6% Decrease |
| 741 | 81 | 1390 | [illegible] | 91 | 1750 | 50 | 95 | 1801 | 75 | 6.7% Decrease |
| 756 | 55 | 1515 | 238 | 72 | 1579 | 195 | 48 | 1131 | 242 | 18.9% Increase |
| 761 | 80 | 2000 | 330 | 80 | 2467 | 168 | 68 | 2604 | 175 | 5.8% Increase |
| 820 | 62-67 | 2141 | 415 | 67 | 2128 | 330 | 77 | 2311 | 180 | 7.5% Increase |
| 846 | 45 | 1446 | 440 | 72 | 1122 | 400 | 50 | 878 | 283 | 12.5% Increase |
| 870 | 79 | 1642 | 248 | 78 | 2406 | 200 | 81 | 1799 | 150 | 8.0% Increase |

153-SR

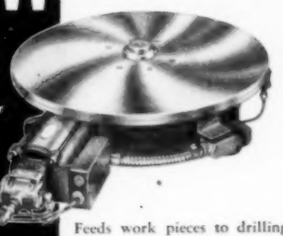
**STALWART RUBBER COMPANY**

10152 NORTHFIELD ROAD ● BEDFORD, OHIO

BREVITY—Identify by IEN - 10814 if you write the maker

# NEW

## HEAVY DUTY DIAL FEED



22" Diameter Table Top

★

4, 6, 9, 12, 18 or 36 stations

★

22" diameter table top positions up to 1000 lb. load quickly and accurately.

★

Write for Bulletin

Feeds work pieces to drilling machines, tappers, press rams, etc. Electrically controlled, air powered. Can be set to position 4, 6, 9, 12, 18 or 36 positions. Table swings into position gently. No abrupt impact. Locks firmly in position. Can be electrically synchronized to other machines. 22" diameter table top is easily removed for mounting jigs or fixtures, or an oversize table top.

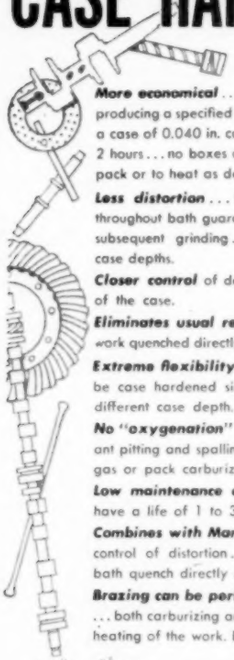
*Write for Bulletin T-85 today. Address: The Bellows Co., Dept. IEN-1051, Akron 9, O.*

**The Bellows Co.**
ESTABLISHED 1911
AKRON 9, OHIO

1309

BREVITY—Identify by IEN - 10815 if you write the maker

# Cut costs with faster CASE HARDENING



***More economical*** ... is the fastest method of producing a specified case depth—for example, a case of 0.040 in. can readily be produced in 2 hours ... no boxes or retorts to pack and unpack or to heat as dead loads.

***Less distortion*** ... temperature uniformity throughout bath guaranteed within 5° F. ... less subsequent grinding ... permits more shallow case depths.

***Closer control*** of depth and other properties of the case.

***Eliminates usual reheating operation*** ... work quenched directly from carburizing bath.

***Extreme flexibility*** ... several batches may be case hardened simultaneously—each to a different case depth.

***No "oxygenation" of the case,*** with attendant pitting and spalling, as frequently occurs in gas or pack carburizing.

***Low maintenance costs*** ... plain steel pots have a life of 1 to 3 years.

***Combines with Martempering*** ... for best control of distortion ... by an isothermal salt bath quench directly after carburizing.

***Brazing can be performed simultaneously*** ... both carburizing and brazing done with one heating of the work. Brazing cost—nothing.

**390 LBS. OF WORK AN HOUR**
... from an Ajax furnace no larger than your desk!

180 lbs. of metal body screws per charge are given case depths ranging from 0.004" to 0.010" as required.

See Us at The Metal Show — Booth F-421

**AJAX ELECTRIC COMPANY, Inc.**
900 Frankford Avenue
Philadelphia 23, Pa.
World's largest manufacturer of electric heat treating furnaces exclusively

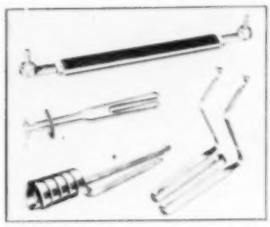
SELF-CONTAINED • SELF-CIRCULATING
AJAX HUGREN

**ELECTRIC SALT BATH FURNACES**

BREVITY—Identify by IEN - 10817 if you write the maker

## HEATING . . Electric element, flat sheathed design for general use

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.



**Flat design** for surface-contact heating, thin sections for convection heating and use in air flow ducts, shaped units for immersion use constitute a new line of flat sheathed electric heating elements. The basic unit is made in length to 10 ft. and in widths of $\frac{17}{32}$ and $\frac{23}{32}$ inch. Thickness is $\frac{5}{32}$ inch. Copper and steel are available as standard sheet materials. Other alloys or plated sheathing and various coatings can be supplied when specified.

**The assembled element** is readily bent and formed, is resistant to moisture and vibration and is proof against sparking or arcing through the sheath. Terminals can be brazed or welded into various fittings. Hold-down straps or brackets are available. Round wire is formed into a flat helix inside the metal sheath. It is insulated from the sheath by uniform strips of metallic oxide material having high thermal and electrical qualities. This material centralizes the resistor wire and holds it mechanically in position.

BREVITY—Identify by IEN - 10818 if you write the maker

## FASTENING . . Precision nails to order for specified application

Source: ROBERTS CO.
1534-38 N. Indiana St., Los Angeles 63, Calif.

**You can order specials here**

**The company** offers a new service employing its installation of precision heading equipment to manufacture special nails in wire sizes ranging from 22 to 10 gage and in length from ¼ to 2½ inches. Head sizes depend on gage and type of wire used. Shape can be round, oval, conical, flat or countersunk. Nail points can be made to meet requirements also.

BREVITY—Identify by IEN - 10819 if you write the maker

## TIMING . . Electric interval unit, 20 or 30 amp. contacts on 110 volt ac.

Source: TORK CLOCK CO.
11 Grove St., Mount Vernon, N. Y.

**Time intervals** are available to 60 min., 4, 12 or 24 hr. in this new No. 925-12P interval timer. Drive is by a Telechron motor for operation on 110-volt, 60-cycle ac. Contact switch is a single-pole normally-open design with rating at either 20 or 30 amp. on 110-volt ac. as specified. The mechanism is enclosed in a housing measuring 4½ by 3 by 3½ inches. List price is about $12.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10820 if you write the maker

# NOW—GET DIESEL POWERED BUDA TOWING TRACTORS

***LOWER operating cost***
***LESS maintenance***
***GREATER safety***
***LONGER operation between overhauls***

Diesel Powered A-14-V Towing Tractor—2400 lbs. draw bar pull

BH-28

Cut fuel costs 50 to 65% with Buda Diesel-powered towing tractors and get safer, non-toxic, non-contaminating operation. Eliminate fire hazards. Diesel-powered tractors can operate safely in hazardous areas. Buda Diesel power gives more hours of dependable, low-maintenance operation and long-life performance.

Ask your nearby Buda Material Handling Distributor about Buda Diesel Powered equipment. He has the facts. Write for Bulletins and specification data. THE BUDA COMPANY, HARVEY, ILL.

***. . . The Line with ALL 3 for Diversified Handling***

**BUDA**

BREVITY—Identify by IEN - 10821 if you write the maker

# pack 64% MORE CURRENT into raceways

When you're called upon to provide extra capacity, how can you satisfy increasing load demands and still use existing raceways? Here's how: re-wire with General Electric Deltabeston* AVA cable—in many cases, you can provide as much as 64% more current-carrying capacity than with ordinary 60 C cable.

AVA cables can safely carry more current at normal ambient temperatures because they can operate effectively at higher copper temperatures. The reason: G-E Deltabeston AVA cables are built to *beat the heat*. They are doubly insulated with heat-beating asbestos and G-E No. 1799 varnished cambric.

Recommend G-E Deltabeston AVA cables for modernization of old systems and for long life in new installations. For information write to Section W66-1042 Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

*Registered Trade Mark of General Electric Company

**GENERAL ELECTRIC**

BREVITY—Identify by IEN - 10822 if you write the maker

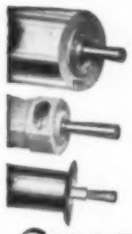
## Variable Speed Control for Light Machinery

## Costs only a trifle — brings amazing results

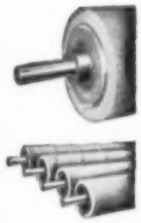
Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66a-J.

**Reeves Pulley Company • Columbus, Ind.**
**REEVES *Variable Speed Control***

BREVITY—Identify by IEN - 10823 if you write the maker



**MANY INDUSTRIAL ROLL PROBLEMS are solved by using**



# SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

**SEND FOR NEW CATALOG NO. 48**
*Most complete publication of its kind*

*Industrial Roll Division*
**RODNEY HUNT MACHINE CO.**
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 10824 if you write the maker

# YOU CAN TAKE IT WITH YOU!

**BECKER**
*Self-Contained*
## SPRAY GUN
**PRESSURE-POWERED**
*with*
**INEXPENSIVE CO2 CARTRIDGE**

This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Has 21 liquid ounce capacity, heavy-gauge, steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO2 cartridge sprays up to one container full, depending on viscosity. Use it for paint, varnish, enamel, oil, fire-proofing, rust-proofing, disinfecting.. If your industrial distributor can't supply you, order direct and we will ship postpaid. (Extra CO2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

**ONLY $15.95 with three cartridges**

**SULLIVAN BECKER CO., Dept. 191-K, Kenosha, Wis.**

BREVITY—Identify by IEN - 10825 if you write the maker

## new metallizing gun cuts machine repair costs 85%-90%

Salvaging worn feed roll journal for textile mill

**40% faster than older models; produces uniform coatings with minimum operator attention.**

The new METCO Type 4E Gun makes metallizing easier to use and a bigger money-saver in industrial maintenance than ever before. With the older types of metallizing guns, constant operator attention was required to maintain oxygen and gas pressures within a close range to obtain uniform coatings. Now, with this new gun, gas pressures are automatically balanced against all normal variations. So little operator attention or skill is required that the gun almost runs itself.

In addition to this advantage, the METCO 4E Gun sprays up to 40% faster than older models. Wire feed is controlled automatically for any wire size from 20 B&S gauge to 1/8 inch, in any metal. Add to these advantages, the recent development of the new metallizing material, Sprabond Wire, which bonds itself to smooth steel surfaces without any mechanical preparation except cleaning. It serves as the perfect preparation coating for spraying with any other finished metal.

repair costs run as low as 10% of replacement cost

Metallizing gets worn parts like these back in service faster and at lower cost than any other method of repair:

| | |
|---|---|
| Air Compressor Parts | Patterns |
| Armature Shafts | Pistons |
| Axle Shafts | Piston Rods |
| Camshafts | Plungers |
| Crankshafts | Pump Packing Sleeves |
| Cylinder Liners | Pump Plungers |
| Fan Shafts | Roll Journals |
| Hydraulic Rams | Rolls |
| Impellers | Spindles |
| Journals | Squeeze Rolls |
| Lathe Beds | Turbine Shafts |

*The following names are the property of Metallizing Engineering Co., Inc.:* METCO®, SPRABOND WIRE. *Reg. U. S. Pat. Off.*

**METALLIZING ENGINEERING CO., INC.**
38-13 30th STREET LONG ISLAND CITY 1, N. Y.
In Great Britain: METALLIZING EQUIPMENT COMPANY LTD. Chobham near Woking, England

R. J. McWaters Metallizing Engineering Co., Inc.
38-13 30th Street, Long Island City 1, New York

☐ Please send me more information about the new Type 4E Metallizing Gun.
☐ Please arrange a demonstration in our shop.

NAME
COMPANY
STREET
CITY ZONE STATE

BREVITY—Identify by IEN - 10827 if you write the maker

## TRUCK . . Gooseneck semi-trailer, 15 to 30 ton, rides on diesel tractor

Source: EASTON CAR & CONSTRUCTION CO.
Holly & Liberty Sts., Easton, Pa.

**Hinged door** on the body of this new Model T1-1015 semi-trailer is designed for lift by an overhead hoist or crane until it clears the load. It then serves as a bail to tilt the body upward for side discharge into a hopper beside which the trailer is spotted. Stabilizer feet on the trailer rest on the hopper wall to steady the frame during the dumping operation. Maximum dumping angle is 70 degrees.

**Construction** includes welded-steel reinforced body and frame, oak floor cushion, replaceable liner plates.

BREVITY—Identify by IEN - 10828 if you write the maker

## TUMBLING . . Abrasive material for wet use in standard equipment

Source: TUMB-L-MATIC INC.
4508-12 Bullard Ave., New York 70, N. Y.

**Packaged in 5 to 50 lb. units**

**Tumb-L-Magic** is a new wet-process tumbling compound that includes a cleaning component in its make-up to suspend grease and cuttings in the wet solution in a tumbling barrel employed in finishing operations. The cleaner keeps the work surfaces and the abrasive material free from action-retarding accumulation so it can act efficiently and uniformly.

BREVITY—Identify by IEN - 10829 if you write the maker

## PROTECTING . . .Respirator for low concentration of vapors, fumes

Source: WILLSON PRODUCTS INC.
217 Washington St., Reading, Pa.

**The face piece** of this new Series 800 respirator is made of molded rubber with feathered rolled edges for a snug comfortable fit. The exhalation valve is positioned to minimize the possibility of dust interfering with normal operation. Inside the face piece is a flexible molded chin cup. The unit is held in position with an elastic adjustable head and neck bands.

**Three cartridge sizes** are 60, 85, and 100 cc. The dual cartridges absorb and chemically filter out gases and vapors. List price with two cartridges ranges from $4.40 to $6.60. Replacement cartridges are $1.75 to $2.60 for a box of four.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10830 if you write the maker

## EARLE GEARS ARE CUT TO YOUR *SPECIFICATIONS*

For gears cut exactly to your specifications, you will find it expedient and economical to come to Earle.

Our facilities include the most modern and efficient machinery available for cutting spur, mitre, bevel, worm, herringbone or other types of gears from any practical material in any diameter from inches up to 30 feet. Our stock of gear patterns numbers over 40,000 and our assortment of cutters and hobs would be difficult to equal.

Why not test our facilities by sending us your prints for quotation the next time you need gears? We are sure that you—like many of our other customers—will find our services ideally suited to your needs. THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa. Sales Offices: 149 Broadway, New York 6; 901 Davis Ave., Pittsburgh 12, Pa.; 7735 Market St., Youngstown, Ohio.

**EARLE GEARS**

It's good business to do business with EARLE

BREVITY—Identify by IEN - 10831 if you write the maker

# SPROCKETS are easy to order

## . . . RIGHT OUT OF THE CATALOG

When the job calls for stock roller chain sprockets—Sewall is as near as your telephone or mailbox. Precision-made Sewall sprockets add life to your chain drives—and they're available in a wide range of sizes. Do you have our complete catalog?

Let us quote on made-to-order sprockets, too.

*By the Makers of Sewall Gears*

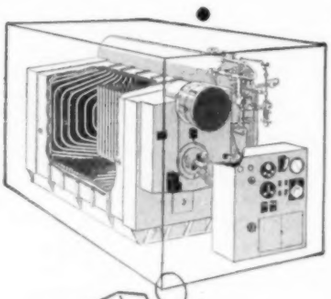
NEstor 1381

**E. B. SEWALL MANUFACTURING CO.**
686 Glendale St. • St. Paul 4, Minnesota

BREVITY—Identify by IEN - 10832 if you write the maker

# Steam with Savings

## in this B & W SHOP-ASSEMBLED UNIT for loads of 2,800 to 25,000 lbs. per hr.



B&W Integral-Furnace Boiler, Type FM

## Note these *Cost-Saving* features

**Saves Erection Time and Cost • Meets Wide Range of Services • Handles Quick Load Changes • Fast Steaming • Low Maintenance • Easy Accessibility • Suitable for Outdoor Service • Burns Oil and/or Gas • Saves Fuel • Saves Space • Safe, Automatic Operation.**

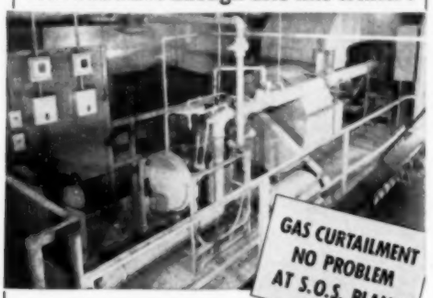
**SEND FOR BULLETIN G-72.** detailing the many advantages of this new B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

**BABCOCK & WILCOX**
*Helping Industry Cut Steam Costs since 1867*

G-536-B

BREVITY—Identify by IEN - 10834 if you write the maker

## Will You Have Enough GAS this Winter?




**THIS OVEN DESIGNED FOR GAS . . . BUT IT'S FIRED WITH OIL BY VAPOFIER**

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

**Capacities from 70,000 to 4,000,000 B.T.U.'s per hour**

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

Do away with Gas shortages *this winter*. Send for FREE booklet "Make Your Own Gas With Vapofier."

**VAPOFIER CORP.** 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 10835 if you write the maker

## NOW pre-color your metal products BEFORE fabricating

## ENAMELSTRIP

STEEL, ALUMINUM, AND BRASS PRE-FINISHED

**COLOR COIL**

saves time! saves labor! saves money!

Users of enamelstrip in continuous-feed coils completely eliminate such costly, time-consuming operations as hand feeding, shearing, cleaning, tumbling, spraying, dipping, rustproofing, baking, drying. Enamelstrip's exclusive pre-treatment and finishing process achieves a flexible, lustrous finish which withstands the stresses of drawing, bending and forming without cracking or peeling. Fabricate your metal parts and products from Enamelstrip to be sure of a smooth, glossy finish *at reduced costs!*

**ENAMELSTRIP** in any metal, any color, coated and precision slit to your specifications.

*Produced*
EXCLUSIVELY BY **ENAMELSTRIP CORPORATION**
**Allentown, Pennsylvania**

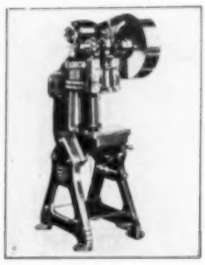
TODAY see how this important new development improves production . . . and profits! Write immediately for detailed descriptive bulletin to our

*National Sales Representatives:*
**THE COATED COIL CORPORATION**
**511 West 30th Street, New York 1, N. Y.**

BREVITY—Identify by IEN - 10837 if you write the maker

## PRESS . . Open back inclinable, 5 and 8 ton, 10 and 12 in. throats

**Source:** FAMCO MACHINE CO.
1303 18th St., Racine, Wis.



**Five new presses** have been added to the company's line of open-back inclinable units. Two rate 5 ton and are available in bench and floor models with 10-in. throat, 6¼ by 9-in. bed area, 6-in. shut height, a standard 1¼-in. stroke. Speed is 285 strokes per min. with a ½-hp. motor operating at 1,725 rpm. The other three machines rate 8 ton, have a 12-in. throat and are designed for floor mounting. Bed area measures 7 by 12 in. and shut height is 7, 10 and 13 inches with the standard 1¼-in. stroke. These presses operate at 180 strokes per min. with a ½-hp., 1,140-rpm. motor.

**A 2-in. stroke** can be specified for the 5-ton design or 3-in. stroke for the 8-ton press. Slide adjustment is through 1¼ in. for the small machine. It is 1½ in. for the large one.

BREVITY—Identify by IEN - 10838 if you write the maker

## SEALING . . Glazing material for aluminum, steel and wood sash

**Source:** W. S. McGUFFIE & CO.
3402 Theurer Court, Cleveland 9, Ohio

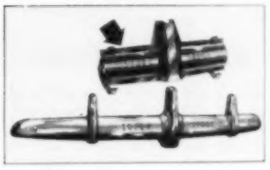
**Package units**
**1 to 100 pounds**

**Penco Dual-Glaze** is a new processed combination of ground pigment and processed oils for glazing application in the place of putty. The material develops a tough pliable protective skin that remains permanently elastic and able to compensate for normal expansion and contraction as temperatures change. Method of application is the same as for putty.

BREVITY—Identify by IEN - 10839 if you write the maker

## PAINTING . . Metal masks cover sunken or raised work surfaces

**Source:** JAS. H. MATTHEWS & CO.
3948 Forbes St., Pittsburgh 13, Pa.



**The company** is prepared to supply, to specification, a new cast metal mask to fit accurately over a given work piece for spray-paint production, in one or more colors, of any required design. The mask applies and removes quickly. It does not require experienced labor to produce a perfect paint job. A special cold-setting rubber can be employed on the mask to protect it against abrasive wear in a sand-blasting operation to produce frosted effects on glass and ceramic work pieces. Crests, monograms and special designs can be applied by this method as well as by spray painting.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10840 if you write the maker

## "ball-lok" V-Belt Clutch

**Only the "Ball-Lok" Clutch Has No Friction Plates!**

Eliminates heating and grabbing. Permits higher speed operation. Saves belts. Adapted to all V-belt clutching problems. No adjustments necessary. Send us your questions.

POWER TRANSMISSION HOUSES — This clutch is becoming an "essential" in your line.

**V-BELT CLUTCH CO.** 418 N. Western Avenue, Los Angeles 4, California

BREVITY—Identify by IEN - 10841 if you write the maker

## REMOVE STUBBORN GREASE AND DIRT FROM METAL PARTS — EASIER, FASTER, MORE ECONOMICALLY WITH . . .

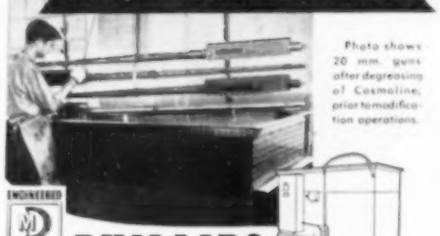


Photo shows 20 mm. guns after degreasing of Cosmoline, prior to modification operations.

ENGINEERED SERVICE **PHILLIPS**

## VAPOR DEGREASERS

**THE** most heavily greased up parts will come clean easier and faster in a Phillips degreaser. High vapor temperature (250.2° F.) not only causes more dissolved grease to run off the metal, but makes for faster degreasing too. Wherever you have parts to clean, large or small, before plating, painting, rustproofing, service and repairwork, etc., you can do it better, faster and more economically with a Phillips degreaser. There's a standard model to meet your needs. Check with Phillips today.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

**Phillips** 3461 Touhy Ave. • Chicago 45, Illinois
*MANUFACTURING COMPANY*
Vapor Degreasers • Solvents • Parts Washers

BREVITY—Identify by IEN - 10842 if you write the maker

## New XL BOND FOR CARBIDE TOOL AND CUTTER GRINDING

**"XL"** is Chicago Wheel's exclusive new bond for silicon carbide vitrified grinding wheels, especially made for grinding carbide cutting tools. Ideal for rough and finish grinding . . . offhand or precision automatic. Supplied in most popular sizes and steel backs. Prompt delivery. Keep your production up . . . costs down, with "XL."

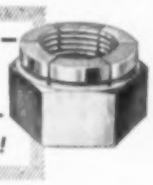
*Write today for information—Dept. N*

**CHICAGO WHEEL** & *Mfg. Co.*
1101 West Monroe St., Chicago 7, Illinois
OFFICES IN PRINCIPAL INDUSTRIAL CENTERS

BREVITY—Identify by IEN - 10843 if you write the maker

**A fastener AIN'T, if — it works loose.**

**The "FLEXLOC" IS — because it won't!**



## FLEXLOC

ONE-PIECE, ALL-METAL
**STOP- and LOCK-NUT**

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

**SPS** STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 10844 if you write the maker

## Keep Floors Clean — and SAFE!

**KENT**

### DRY SCRUBBER

Clean, safe floors keep production rates up and accident rates down! The KENT D-20 DRY SCRUBBER does the job—tackles impacted dirt and grease accumulations with a vengeance! Send for free literature—see what KENT can do!

**KENT Brushes are self-sharpening**

Five individual brushes rotate as a unit . . . and maintain top cutting efficiency as they work.

KENT DRY SCRUBBER Model D-20

*Manufacturers of KENT Floor Machines, KENT Commercial Vacuum Cleaners, KENT Flux Recovery Units, KENT Furnace Cleaners*

CLEAN WITH **KENT** EQUIPMENT

THE KENT CO. INC., 437 CANAL ST., ROME, N. Y.

BREVITY—Identify by IEN - 10845 if you write the maker

**Don't Let ATHLETE'S FOOT Bench YOUR Players!**

**ALTA-CO BUILDS MORE EFFECTIVE TEAMS!**

**In baseball, track, swimming and any sports competition, HEALTHY teams are WINNING teams. ONE member with painful, distracting Athlete's foot can impair the efficiency of your entire team.**

**Here's the Sound Tested Program for ATHLETE'S FOOT Control:**

**1. ALTA-CO POWDER**

. . . for the all-important foot tub in your shower rooms. One pound to a gallon of water kills common Athlete's Foot fungi IN LESS THAN A MINUTE! Non-irritating; harmless to towels. Easily tested for proper strength with Dolge Alta-Co Powder Tester.

**2. ALTA-CO FOOT POWDER**

. . . for dusting, gives additional protection against re-infection. Soothes while drying between toes in shoes and socks, this potent but gentle fungicide does its work where Athlete's Foot fungi flourish.

**3. ALTA-CO 300 H.D. FUNGICIDE**

. . . for your daily, systematic washing of shower room floors. In economical solution (1 to 300), its action is both fungicidal and bactericidal, giving your floors the same hygienic sanitation you demand be taken by each user of your facilities.

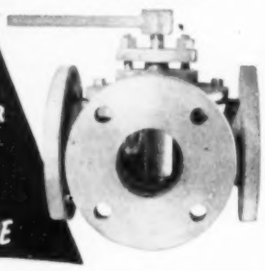
*Write for 36-page illustrated booklet, "Athlete's Foot—A Public Health Problem."*

*dependable* **DOLGE**

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 10846 if you write the maker

**The simplicity of HONEYWELL 3-WAY TRANSFER VALVES will SAVE YOU MONEY and SPACE**



THE HONEYWELL transfer valve is a simple, compact valve designed for diverting flow from one line to another—such as cooling water from one condenser to another or oil from one strainer to another. It replaces two conventional valves and fittings. Operates by movement of single lever . . . no chance of opening or closing both lines simultaneously.

Sizes 1½ to 8 inches . . . straight-way or three-way . . . screwed or flanged. Available in high tensile iron with iron or bronze trim; bronze with bronze trim. Other materials and larger sizes on request. Body ratings 125-150 lbs. ASA facing and drilling. Maximum inlet pressures 50 psi to 10 psi. Cost is low . . . act quickly.

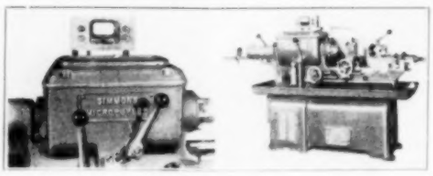
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, *Industrial Division,* 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

**Honeywell** VALVE PRODUCTS

BREVITY—Identify by IEN - 10847 if you write the maker

## LATHE . . Simplified design, bar stock capacity to 1¼ inches

Source: SIMMONS MACHINE TOOL CORP. 1010 N. Broadway, Albany 1, N. Y.



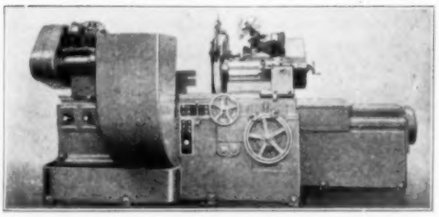
**New lathe** is designed for production use in a variety of machining operations on bar stock to 1¼ in. in diameter. It also can be employed in chucking operations with its 14-in. swing over the bed and 6-in. swing over the cross slide. Two spindle-speed ranges are 188 to 750 rpm. and 44 to 177 rpm. in direct drive and with back gears engaged. Range can be selected by pressing a push button on the headstock to actuate a double-throw Twin Disc clutch. The spindle is mounted in double-row Timken bearings with a straight SKF roller bearing at the rear. Clearance hole through the spindle measures 1½ inches.

**Cross slide travel** is 5 in. front to back, 12 in. in line with the bed. Hand screw feed is standard. The hexagon turret mounts 1-in. tool holes and provides an effective turning movement 6 in. in length at one setting on the bed. Maximum distance, end of the spindle to the turret face, is 18 inches. Three power feeds are 0.006 to 0.018 in. in the back-geared machine and 0.004 to 0.012 in. in the plain machine. Drive is by a 3-hp. motor and variable-speed transmission with detachable linked V-belt connection to the spindle.

BREVITY—Identify by IEN - 10848 if you write the maker

## GRINDING . . Cylindrical machine has gap bed for 86 in. swing at the work

Source: NORTON CO. 36 New Bond St., Worcester 6, Mass.



**Aircraft struts** are the intended work for this new special design in the company's line of cylindrical grinding machines. It is arranged for a 26 or 32-in. swing over the table, is available in work-length capacities of 72 to 96 in. and has swing capacity of 80 or 86 in. by means of the gap. This gap also is adjustable in width by moving a pedestal on which the headstock rests. Maximum width is 26½ inches. A telescopic guard covers the opening at the front beside the operator.

**The machine** is traveling-wheel-head type with controls centered at the operator's position. A swivel table permits taper grinding. The wheel-spindle assembly is standard design by the company. An auxiliary spindle is available to specification for parts with projections.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10849 if you write the maker

## TRANSALL Heavy Duty Idlers are ***Pre***-Lubricated

*The high quality lubricant is sealed in.*

Troughing Idler

**No lubrication labor. No lubricant cost.**

Because of the permanent lubrication and the rugged construction, TRANSALL Idlers have a greater life expectancy than other makes of idlers. The more severe the service, the greater this advantage.

***Why not investigate how we can help you keep operating costs to a minimum?***

TRANSALL Idlers will probably slip right into your present installations, since they are dimensionally interchangeable with most leading lines.

*Immediate Shipment*

**TRANSALL** INC.

*Manufacturers of a complete line of Belt Conveyor Equipment*

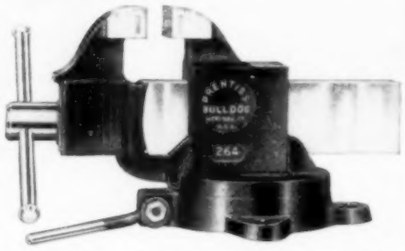
**117 North 11th St. Birmingham 4, Ala.**

BREVITY—Identify by IEN - 10850 if you write the maker

## PRENTISS

### "BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE HINGE PIPE — WOODWORKERS' — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

**PRENTISS VISE DIVISION**

OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

BREVITY—Identify by IEN - 10851 if you write the maker

*Newark for*

**FABRICATED WIRE CLOTH**

STRAINERS
FILTERS
SCREENS

Our engineers, long experienced in the design and manufacture of precision wire cloth parts, can help solve your fabricated woven wire parts problem. We are equipped to manufacture everything from water strainers to aircraft fuel, oil and air filters. The cloth we use is Newark, long noted for its uniformity of mesh and durability of weave.

May we quote on your next requirements?

**NEWARK** *for* ACCURACY

**Newark Wire Cloth COMPANY**

342 VERONA AVENUE • NEWARK 4, N. J.

BREVITY—Identify by IEN - 10853 if you write the maker

*When heavy, unwieldly weldments like these diesel crank cases can be quickly swung into any position so that every weld is made downhand—that's efficient welding.*

**Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.**

Write for Bulletin WP 24—an illustrated circular detailing the Specific Advantages of C-F Positioners.

**CULLEN-FRIESTEDT CO.**

**1310 S. Kilbourn** **Chicago 23, Ill.**

BREVITY—Identify by IEN - 10854 if you write the maker

LIKE AN
# ATOM-IC
EXPLOSION

**Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet**

**If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:**

**$27.65 if coal (7,900 lbs.)**
**$38.00 if oil (633 gals.)**
**$50.63 if gas (67,500 cu. ft.)**

**STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.**

PAT'D. **"EASY-TITE"**

## Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

***Built like a tire with fabric re-inforcement***

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

**THE NEW 'SEXAUER' CATALOG,** Edition F, just out pictures over 2500 TRIPLE WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

*A postcard will bring him and our NEW Catalog F promptly.*
J. A. SEXAUER MFG. CO., INC., Dept. K-101
2503-05 Third Avenue, New York 51.

**SEXAUER**
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

*as advertised in* **THE SATURDAY EVENING POST**

BREVITY—Identify by IEN - 10856 if you write the maker

## BENDING . . Clamp attachment holds work on company's bending machine

**Source: O'NEIL-IRWIN MFG. CO.**
**318 Eighth Ave., Lake City, Minn.**

**Quik-Lok** trade names new clamp attachment developed for use on the company's bending machine to hold tubing, angles, channels, extrusions during the forming operation. The clamp will take any material within the capacity range of the bending machine which has been on the market for some time. It can be adjusted for any radius to 9 inches.

BREVITY—Identify by IEN - 10857 if you write the maker

## METALS . . Enamel coated strip in aluminum, brass, steel, tin plate

**Source: COATED COIL CORP.**
**505 W. 30th St., First Floor, New York 1, N. Y.**

**Can be drawn, bent, formed, fabricated**

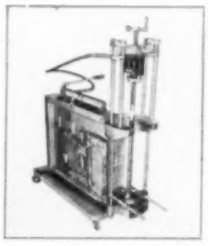
**Enamelstrip** trade names new metal strip supplied in coils of specified material length, width and gage. Overall width range is between 7/32 and 30 in. with thickness from 0.006 to 0.040 inch. Any type of synthetic enamel or lacquer can be specified in the coating with lustrous or dull finish, with one color on both sides or one side, or with different colors on the opposite faces.

**The company** will supply the metal coated and slit to specified width or will coat and slit metal supplied by the user as required. The pre-finished material can be processed without injury to the coating in manufacture of a range of stamped and formed products.

BREVITY—Identify by IEN - 10858 if you write the maker

## PRESS . . Hand hydraulic assembly based on company's push-pull jack

**Source: OWATONNA TOOL CO.**
**371 Cedar St., Owatonna, Minn.**



**Portable assembly** has been added to the press-mounted arrangement of the company's hand-hydraulic jack, previously described IEN-4738-51. The new unit is known as Hydra-Tote Portable. It provides 17½ ton of press capacity with 10½ in. of clearance between the press uprights, 11 in. between the ram and the top of the press plate and 34 in. from the top of the press plate to the floor. Overall dimensions are 36½ by 16 by 32 in. for the new assembly.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 10859 if you write the maker

**PULLMAX DOES IT ALL!**

**PULLMAX**

**Sheet and Plate Working Machines**

Imagine, one machine doing all of these operations—seven models that work the finest gauges up to 11/32" (in mild steel). Also ideal for working stainless, non-ferrous metal, wire mesh. Leaves a smooth perpendicular cut with no further finishing required. Pullmax does it better . . . faster.

WRITE FOR ILLUSTRATED CATALOG

**AMERICAN PULLMAX CO., INC.**

**2631 North Western Avenue** **Chicago 47, Illinois**

BREVITY—Identify by IEN - 10860 if you write the maker

Here's quick, easy fastening for many jobs in shipping rooms and manufacturing departments. Bostitch P4 Stapling Plier securely seals small packages, quickly repairs light and medium weight containers. Ideal for sealing flexible corrugated wrappings. Also saves time and materials on many light and medium manufacturing jobs. Powerful action with little effort. For complete details on Bostitch P4 Pliers, write us direct. BOSTITCH, 470 Mechanic Street, Westerly, Rhode Island.

Staple can be applied 4¾" in from edge of container with a Bostitch P4 Plier.

**BOSTITCH®** fastens it better AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

BREVITY—Identify by IEN - 10861 if you write the maker

*One* OF A LINE...
FOR ARMED FORCES
COMMUNICATIONS...

## "GUARD-A-SEAL" CONTROLS »»

Name your need—"Guard-A-Seal" relays to fly the mighty B-47 or a tiny sub-miniature control assembly; jet fighter flight switches or switches for vending control; mechanisms for a giant big-league scoreboard or a compact liquid level control—get them all at GUARDIAN. Over 35,000 standard parts to speed orders—plus a TOP ENGINEERING STAFF to solve "special problems". The Series 795 D. C. is available in Lug Header containers and to specifications in A.N. Connector, Screw Terminal or Octal Plug housings. Also obtainable with open mountings. Write.

**GUARDIAN ELECTRIC**
1620-L W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 10862 if you write the maker

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**—of "Standard's" UNBRAKO *Standards.***
**Write on your business letterhead, today.**

SOCKET UNBRAKO SCREWS

"STANDARD" RECOMMENDS STANDARDS

**SPS** STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 10863 if you write the maker

# ARMSTRONG
*Drop Forged*
## LATHE DOGS

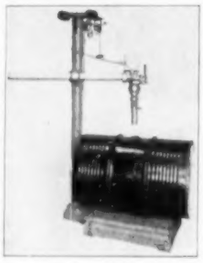
ARMSTRONG Lathe Dogs give extra service because they are drop forged from selected open hearth steel and are heat treated to extreme toughness and stiffness. Hubs are made large enough to permit re-tapping, screws are also of special analysis steel and are hardened at the point to prevent upsetting. ARMSTRONG Dogs come in 10 types with square head or safety headless screws, with straight or bent tails. They are carried in stock by your local ARMSTRONG Distributor.

*Write for catalog*

**ARMSTRONG BROS. TOOL CO.**
5243 West Armstrong Ave.
Chicago 30, Illinois
New York and San Francisco

BREVITY—Identify by IEN - 10864 if you write the maker

# AUTOMATIC DRUM FILLER



Fills containers from 5 gallons up.

Operates from a lighting socket.

Handles any liquid.

Accuracy unaffected by air, vapor, sediment.

Fills to predetermined net weight.

Available in standard or explosion proof models.

Needs no temperature adjustment

A real time saver with heavy liquids

**Ask for four page catalog "Automatic Drum Filling Valves"**

**THE VOL-U-METER COMPANY**
**BUFFALO 16, N. Y.**

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*Send for your copy of this*
**CATALOG TODAY!**

60 pages of valuable information describing the line of Honeywell Automatic Controls

THE KIND of information you want, right at your finger tips . . . on pneumatic, electric and electronic non-indicating controls for temperature, pressure and humidity.

Catalog No. 8304 is complete and factual . . . send for your copy today.

Also ask to be put on the mailing list for *Industrial Control News*—a periodical publication devoted to new and unusual applications of automatic controls throughout industry. It is written by and for production and maintenance men.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS **Honeywell**
*Brown Instruments*

BREVITY—Identify by IEN - 10866 if you write the maker

## SAWING . . Hacksaw blade for power drive, 14 to 24 in. length

Source: JOHN H. GRAHAM & CO.
105 Duane St., Dept. IEN, New York 7, N. Y.

**Powerflex** trade names a new power hacksaw blade manufactured by G. W. Griffin Company and marketed nationally by John H. Graham. The blade is made of three separate pieces of steel welded together. These include a tough steel back to absorb shock, a medium-hard steel center and a hard tough cutting edge. Pitch is 4, 6 or 10 teeth per inch. Lengths are 14, 18, 21 and 24 inches.

BREVITY—Identify by IEN - 10867 if you write the maker

## TESTING . . Heat indicating pellets designed to melt at given temperatures

Source: TEMPIL CORP.
132 W. 22nd St., 3rd Floor, New York 11, N. Y.

**Fifty pellets and cups list at $5**

**Series R** is new design in the company's line of temperature-indicating pellets to supplement its previously developed standard series. The standard pellets are not suitable for use in reducing atmospheres such as hydrogen, cracked ammonia, water gas, producer gas, carbon monoxide. The new Series R, however, will correctly indicate temperature in these atmospheres. Thirteen temperature points for which the new pellets can be supplied are between 650 and 1,300 deg. F.

**A small shallow** cup made of stainless-steel foil is furnished with each pellet and the cup, with the pellet in place, is positioned on the object or in the zone where temperature measurement is desired. The cup serves as a container for the melted pellet and prevents its dissipation on prolonged heating. It also separates the pellet from the work surface so the surface cannot be stained by contact with the liquid material.

BREVITY—Identify by IEN - 10868 if you write the maker

## TRUCK . . Four wheel shelf design, for hand operation, is built to order

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.

**Illustrated** is typical design of a new hand-operated shelf truck the company is prepared to supply in specified dimensions. Steel shelves are welded to angle-iron uprights and the body assembly is mounted on casters, two rigid and two in swivel design. In the larger of the two units shown, overall dimensions are 54 by 24 in. and the wheels are 5 in. in diameter. The small truck is 40 by 24 in. with 6-in. wheels.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10869 if you write the maker

# SCHERR LIMITED BUDGET INSPECTION LABORATORY

*is a* **MUST** *for all* **PRECISION WORK**

A COMPREHENSIVE SET OF MEASURING TOOLS AND INSTRUMENTS providing means for indisputable control of all precision work.

THICKNESS, DIAMETERS, LENGTHS, PROFILE, SHAPE AND FINISH — Simple in construction, reasonable in price, and fully reliable for unerring accuracy and wherever possible independent of the human element of "feel".

***SAFEGUARD YOUR PRODUCTION***

**WRITE FOR DETAILS TO . . .**
**GEORGE SCHERR CO., Inc.**
COMPLETE LINE OF PRECISION INSTRUMENTS
**198-C LAFAYETTE ST. • NEW YORK 12, N.Y.**

BREVITY—Identify by IEN - 10870 if you write the maker

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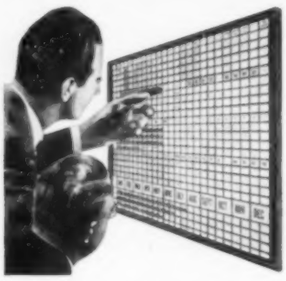

- Graphic Picture of Your Operations—Spotlighted by Color
- Facts at a Glance—Saves Time and Eliminates Confusion
- Simple and Flexible—Easily Adapted to Your Operations
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- Compact, Attractive. Made of Metal. Over 20,000 in Use.

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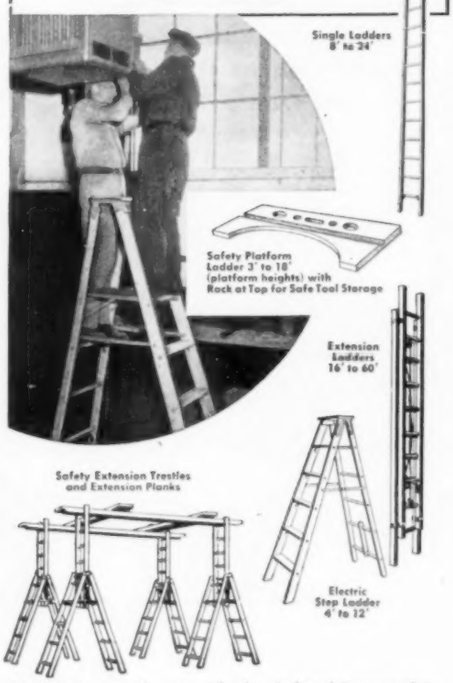
GRAPHIC SYSTEMS, 55 West 42nd St., New York 18

BREVITY—Identify by IEN - 10871 if you write the maker

## Cost Less Per Year . . . because They Last YEARS Longer

# GOLD MEDAL LADDERS AND TRESTLES




In factories, warehouses and other industrial properties, service and maintenance men demand Gold Medal Ladders and Trestles because they are stronger, safer and withstand hard usage for years longer. Made of the finest, selected woods, they're skillfully made in a large, modern factory by one of the oldest organizations in the field—with more than seventy years' experience.

**Types and Sizes for Every Need**

You can put your men at the most convenient working height *in greater safety* with Gold Medal Ladders — single, extension and step types — some of which are illustrated — *in a wide range of sizes.*

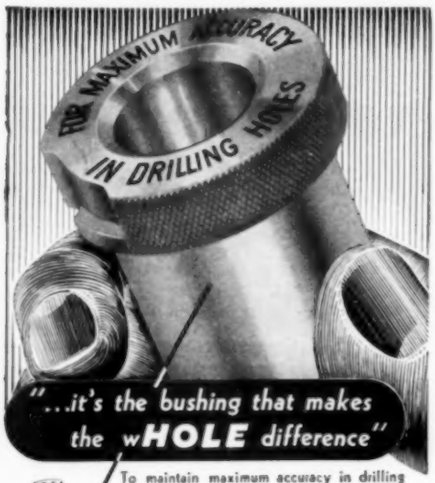
*Used in thousands of plants. See how they can help you . . . write for new Catalog L-71.*

Ladders, Sea-to'an for any Purpose—Any Place—Any Time

GOLD MEDAL LADDERS SCAFFOLDING — *for Greater Safety...Efficiency...Economy*

**THE PATENT SCAFFOLDING CO., Inc.**
**38-21 12th St., Dept. IEN, Long Island City 1, New York**
*See Your Classified Telephone Directory for Nearest Office*

BREVITY—Identify by IEN - 10873 if you write the maker




To maintain maximum accuracy in drilling operations, use the bushing that's precision made for the job...use Acme. Write for catalog.

**Acme Industrial Company**

*Makers of Hardened and Ground Precision Parts*

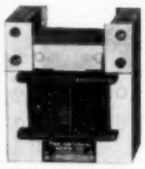
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS

THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 10874 if you write the maker

## WHERE PROFIT DEPENDS UPON PRECISION PERFORMANCE—*FAST*

## Plageman Picks NAMCO "Stellite"-Welded SOLENOIDS



Five pull-type Namco "Stellite"-Welded Solenoids, in sizes of from 2 1/2 pounds, 1/2" stroke to 11 pounds 1" stroke, are used on the Plageman Pack-A-Matic seed packaging machine.

The Pack-A-Matic automatic seed packaging machine manufactured by Plageman Enterprises, Willoughby, Ohio, has a capacity of up to 4500 packages per hour.

Up to 4500 packages per hour! That's the capacity of this seed packaging machine. It means 4500 complete cycles every hour—4500 chances to lose money through improper functioning. No wonder precision performance is a "must".

That's why Plageman Enterprises has standardized on Namco "Stellite"-Welded Solenoids to activate key operations of this Pack-A-Matic automatic seed packaging machine. Instantaneous and positive action of each of five Namco Solenoids safeguards the perfect timing and sequence of the complete machine cycle. And close ones aren't good enough—each motion must be "on the nose" to prevent jamming.

If you have similar key operations on your products—points where you need a push or a pull of up to 25 pounds—it will pay you to investigate Namco Solenoids. They're tops for rugged mechanical construction, for dependable fast operation, for low current consumption. May we show you how they can be engineered for your specific application?

176 East 131st Street • Cleveland 8, Ohio

ELECTRICAL MANUFACTURING DIVISION

**The NATIONAL ACME Co.**

CLEVELAND, OHIO

BREVITY—Identify by IEN - 10876 if you write the maker

## PAINTING . . Spray gun to handle enamel, lacquers, paints

Source: BINKS MFG. CO.
3122 Carroll Ave., Chicago 12, Ill.

**List price** is about $23 for this new aluminum body Model 29 paint-spray gun. Weight is 20 ounces. Construction features a cartridge-type air valve for quick replacement in the event of wear and a replaceable and interchangeable brass-and-steel material passage to "set up" the gun for a given material in production, touch-up, or maintenance operation.

**Air is connected** at the bottom of the handle or, to specification, at the back of the gun. Material connection is made just back of the nozzle. An assembly with a detachable 1-qt. siphon cup, in place of the material hose, is available at a list price of about $30. Assembly employing a material nozzle and needle valve equipped with carbide inserts to handle abrasive materials brings the list price to about $35.

BREVITY—Identify by IEN - 10877 if you write the maker

## PROTECTING . . Liquid material prevents fogging on windows, goggles

Source: REGAL AIR CORP.
500 Fifth Ave., Room 1823, New York 18, N. Y.

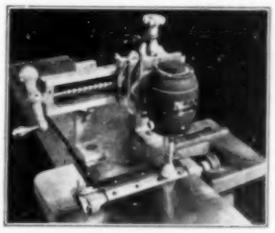
**Protection to 30 days**

**Type RA-12** is a new liquid for application by spraying in a plunger-type atomizer, one of which is supplied with each 4 to 8-oz. container. The liquid prevents fogging by chemical reaction to moisture in the air. It will disperse fog that has gathered on the glass surface. The liquid is clear and colorless, will not cause visual distortion or discolor surfaces.

BREVITY—Identify by IEN - 10878 if you write the maker

## WOODWORKING . . Knife grinder for cutter head on Delta 8 in. jointer

Source: ROCKWELL MFG. CO.
614 E. Vienna Ave., Milwaukee 1, Wis.



**New attachment** positions a motor-driven spindle and abrasive cup wheel on the table of the company's 8-in. Delta jointer to sharpen the wood-cutting knives without having to remove them from the machine. The motor is traversed on ways forming an integral part of the fixture by turning a lead screw. The motor connects to a 110-volt 60-cycle ac. line. Motor mounting includes vertical adjustment so the wheel can be positioned with relation to the knife. The machine table is drilled and threaded to take the new grinding attachment.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10879 if you write the maker

**American Industry Ever Knew... *in Materials Handling Operations***

√ MOVES TONS OF YOUR PRODUCT AT THE TOUCH OF A BUTTON √ NEW "ARMORED" POWERHEAD DEFIES DESTRUCTION √ NOW SO COMPACT IT TURNS WITHIN ITS OWN SHADOW √ NEW MOTOR—SAME SIZE, BUT 20% MORE EFFICIENT

**No wonder there are more Automatic Transporters in use today... than any other operator-led Electric Trucks!**

Small wonder management is so enthused about cost-cutting "101" TRANSPORTERS. These mechanized cost savers not only speed production and boost shipments—they also eliminate back-breaking, old-fashioned hand handling—*actually release manpower for more productive work!* It doesn't matter whether you employ as few as 5 men in materials handling operations, the rugged "101" Transporter will save you money. Send for the facts today!

Trade Automatic Mark

109 W. 87th St., Dept. T-1
Chicago 20, Illinois

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC INDUSTRIAL TRUCKS

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## AUTOMATIC MERCURY CLUTCH

*Performance-tested for Years on Thousands of Installations*

**for ELECTRIC MOTORS**
- *SAVES starting current*
- *CUSHIONS motor starts*
- *PREVENTS motor damage*

**for GASOLINE ENGINES**
- *ELIMINATES stalling*
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A Mercury Clutch not only improves the performance of appliances and equipment powered by electric motors and gasoline engines but also *adds to their saleability.*

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*Mercury Clutch Division*
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

BREVITY—Identify by IEN - 10881 if you write the maker

**NOT WHEN YOU USE IDEAL Stencil Marking Equipment**

IDEAL STENCIL CUTTING MACHINE. Automatic Carriage Return and Word Spacer for fast, accurate stencils . . . visible cutting—see what you're doing . . . Minimum Margin Grip—saves up to 25% on stencil board.

"HANDY A" ANGLE BRUSH
Natural-grip handle . . . Push-button ink feed . . . one-piece, can't leak Aluminum body.

IDEAL STENCIL INK
Complete line of black and colored fountain brush and metal marking inks. Free-flowing, quick-drying.

**IDEAL STENCIL MACHINE CO.**

*FREE!* "IDEAL SHIPPING GUIDE." Valuable shipping dept. tips.

136 Iowa Ave., Belleville, Ill.

BREVITY—Identify by IEN - 10882 if you write the maker

# 42 STOCK SIZES IN HALLOWELL SOLID STEEL COLLARS

**Precision machined for shafts from 3/16" to 3" diameter inclusive.**

Write for prices and name of your nearest distributor.

**SPS**

STANDARD PRESSED STEEL CO.

JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 10883 if you write the maker

# SHELDON
CHICAGO

*A better Lathe from any angle*

Judge it from any angle for accuracy, stamina, rigidity or capacity for size. Check its component parts—its spindle, spindle bearings, lead screw, apron, carriage, bed, gearing, or the power delivered by its drive—you will find the SHELDON Lathe a quality tool both in appearance and "under the hood".

Write for Catalog

SHELDON MACHINE CO., Inc., 4208 North Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 10884 if you write the maker

## THE FLORLINE MARKING MACHINE

**Makes Safety & Parking Lines At Walking Speed!**

**Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.**

- Makes curved, straight, continuous or skip lines . . . 2, 3, or 4 inches wide with interchangeable carriages.
- Holds 1½ gals. paint, lacquer, whitewash . . . cannot spill.
- No motor, compressor or attachments.
- One man, one hand operation.
- Portable, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

**$97.50**
F.O.B. Detroit

Fully Guaranteed.

**H. C. SWEET CO.**
12083 Woodbine Avenue Detroit 28, Michigan

BREVITY—Identify by IEN - 10885 if you write the maker

*Yours for the asking...*

**BROWN THERMOCOUPLE WELLS CATALOG No. 200-1**

This new catalog tells all you want to know about Brown thermocouple wells . . . engineering data, sizes and types for a wide range of applications. Photographs, dimensional drawings and performance curves clarify and simplify your selection.

This catalog is part of the *complete* service available to you through your local *Honeywell Supplies Man* . . . with his HSM Plan for greater convenience and economy in all of your pyrometer supplies purchasing. Call him in for a discussion of your needs. Write for a copy of this new catalog, today!

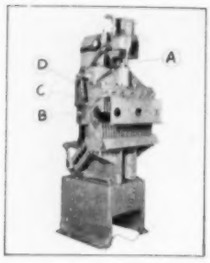
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS **Honeywell**
*Brown Instruments*

BREVITY—Identify by IEN - 10886 if you write the maker

## STRAIGHTENING . . Pneumatic press for bent core rods from foundry molds

Source: GENERAL RIVETER INC.
777 Hertel Ave., Buffalo 7, N. Y.




**Core rods** measuring ¼ to ½ in. in diameter are passed through this new press after they have been salvaged from foundry molds. The press straightens them so they can be used again. V-dies employed in the press consist of interleaving fingers, top and bottom, to present an opening that will take the bent rods and to close this opening down when air pressure is applied by operating the lever A on a pneumatic valve at the top of the machine.

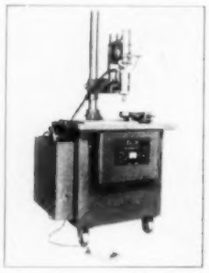
**Air from a shop line** passes through a pressure reducer to operate the press for a power stroke and also to return it to "up" position. Forty-five pounds is sufficient to straighten ¼ and ⅜-in. rods.

**Just prior** to reaching the bottom of the stroke a finger B is engaged by a latch C so the finger will be raised when the ram is returned upward. This movement operates a stripper to unload the straightened rod and leave the dies free to receive the next one. Near the top of the ram movement a cam D disengages the finger and latch so the former can return with the stripper to "down" position. The V-blocks measure 24 in. right to left.

BREVITY—Identify by IEN - 10887 if you write the maker

## DRILLING . . Metal disintegrator for hardened steel, Stellite, carbides

Source: ELOX CORP.
738-42 N. Rochester Road, Clawson, Mich.



**Electron Drill** trade names the company's Type M-7 Tapmaster metal disintegrator to cut holes in broken taps, drills, reamers, studs to permit their removal from the holes in which they have been broken. The machine employs a hollow copper-alloy electrode in its spindle above the work table. It provides longitudinal movement with non-rotation. It includes the electrode in a low-voltage circuit. Cooling water feeds through the electrode.

**Flow of current** actuates a solenoid in the machine head to reciprocate the electrode through a small amplitude and cause sparking action between its end and the work. Net result is disintegration of the metal under the electrode with some disintegration also of the electrode itself. The tiny particles are carried away in the cooling water.

**Capacity** covers a range of holes from 0.040 to 1 in. in diameter to an accuracy within 0.010 inch. Electric rating is 2 kva. The electrode tube costs about 10 cents per inch and 1 in. is sufficient to cut through 2 in. of tool steel. Odd-shaped holes can be produced, as well as round ones, since no rotation is required. The head can cut at any angle to 45 degrees.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 10888 if you write the maker

**You'll want this valuable book—it tells how to cut steam operating costs, control quality and increase production.**

COCHRANE CORPORATION
3152 N. 17th Street, Philadelphia 32, Pa.

Please send me a copy of your Publication No. 3250 on Cochrane C-B System of Condensate Drainage Control.

Name
Firm
Address
City Zone State

BREVITY—Identify by IEN - 10889 if you write the make

# Rubber Parts NO MOLD COST

- Short Runs
- Experimental Work
- Change in Present Parts

**Can now be produced without the usual high cost of molds or forms. Small charge for pattern if not supplied by customer.**

*CONDUCTIVE RUBBER SPECIALISTS*

**GALLEHER, Inc.**
4782 Warner Rd. Cleveland 25, Ohio

BREVITY—Identify by IEN - 10890 if you write the maker

# M·S·A
# Pneolator

**The NEW-SAFE Apparatus for Automatic Artificial Respiration in ALL Cases of Arrested Breathing**

The nearest mechanical approach to *natural* respiration . . . automatically inflates lung with selected pressure of oxygen, rhythmically, effectively, safely. *No suction cycle*—normal passive return of muscles and lungs produces exhalation. Immediate change-over to inhalator action when patient starts breathing. Housed in rugged, strong Fiberglas carrying case for easy portability. To give victims of asphyxia a better chance for recovery—have a Pneolator always ready. Ask for new Bulletin No. CH-3.

**MINE SAFETY APPLIANCES COMPANY**
BRADDOCK, THOMAS and MEADE STREETS • PITTSBURGH 8, PA.
*At Your Service*
54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

CALL THE M.S.A. MAN ON YOUR EVERY SAFETY PROBLEM . . . HIS JOB IS TO HELP YOU.

MSA SAFETY EQUIPMENT HEADQUARTERS

BREVITY—Identify by IEN - 10892 if you write the maker

The New CLEARVIEW
NAMEPLATE PRESS
EASY TO OPERATE · COMPACT · DURABLE

Here at last is a new low-priced Nameplate Press that will pay for itself quickly and many times over.

Now you can stamp neat, perfectly aligned letters and figures on all types of identificaton plates with this new, easy-to-operate Nameplate Press:

MACHINERY DETAIL PLATES
KEYS — TAGS — CHECKS
DIRECTORY PANELS
and scores of other identification purposes.

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- Stamps Neat Uniform Characters
- Fully Automatic Letter Spacing
- High Quality Hardened Steel Dial
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- Accommodates Plates up to 2½" x 4"
- Nickel Plated Throughout
- Uses No Electricity

FULLY GUARANTEED

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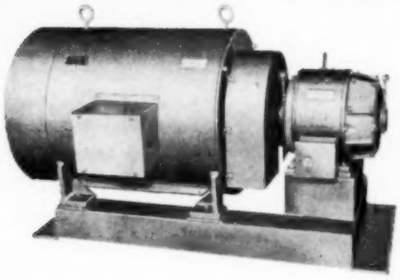
The CLEARVIEW Company
345 E. Houston St., New York 2, N. Y. GR. 3-3830

BREVITY—Identify by IEN - 10893 if you write the maker

Do You Have Use For Practically Pure
400 CYCLE POWER
Less than 1/2% total Harmonics?



★ For use in Laboratory and Production testing of high performance electronic equipment Bogue has developed a line of single and three phase 400 Cycle Synchronous Motor-Generator Sets ranging from 3 to 100 KW with total harmonic content less than 1/2%. This extreme quality in wave form is secured thru precision design, careful selection of material and quality control in manufacture.

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If you are interested in this type power, Bogue engineers will be glad to furnish oscillograms and wave analysis of typical sets built for this requirement. You can always depend on...

MAGNETIC AMPLIFIER CONTROLLED
BOGUE PRECISION POWER

Bogue Magnetic Amplifiers...

● *Provide maximum dependability with low operating costs. New type core material greatly increases performance. Completely static, no moving parts. Unaffected by vibration or shock, no warm-up period required. Write for Bulletin #86; no obligation.*

MAGNETIC AMPLIFIERS • MAGNETIC CONTROLLERS
AC & DC MOTORS • AC & DC GENERATORS
VOLTAGE & SPEED REGULATORS • SWITCHBOARDS

BOGUE ELECTRIC MANUFACTURING CO.
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★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

# PRODUCT INDEX

## How to find what you need:

**Leaf through the issue** with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

**Next use this index** to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

**Now take one subject** at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

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BREVITY—Identify by IEN - 10895 if you write the maker

A Paid News Advertisement By Schatz Manufacturing Co.

How a special low-cost ball bearing eliminated assembly rejects

This Schatz "Commercial" Ball Bearing was specially designed to support the thread spool on a textile weaving machine operating at 2500 RPM under a 20-pound load. Previously, the spool had been held by a slotted washer, spot-welded to a standard bearing. Rejects were high, since the heat of the welding operation caused distortion of the balls and races.

Schatz engineers designed a new bearing with a split inner race and a flanged outer race to replace the washer. Result: the bearing could be used immediately without the costly spot-welding operation, and rejections due to heat distortion were completely eliminated.

Special "Commercial" Ball Bearings—like the one shown—are often less expensive than standard bearings, since costly assembly and machining time is eliminated.

We will be glad to adapt or design a low-cost Special Ball Bearing to fit your specific requirements. Write for literature.

THE SCHATZ MANUFACTURING COMPANY
6750 Fairview Avenue, Poughkeepsie, N. Y.

BREVITY—Identify by IEN - 10896 if you write the maker

For ACCURATE Performance and HIGH Production...

USE
MOTCH & MERRYWEATHER Master-Cut
SLITTING and SLOTTING SAWS

Less breakage with Dual-Drive!

Better, but no higher priced—M. & M. Master-Cut slitting saws. Strong tooth form. Ample side clearance and flat hub avoid binding. Firm clamping, accurate cutting. Exclusive Dual Drive or conventional key drive.

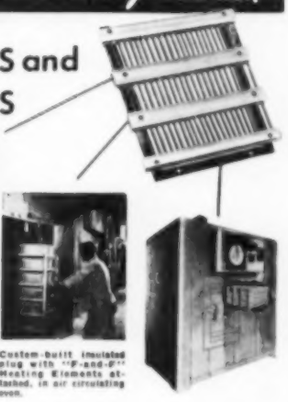
*See your local dealer for quick service.*

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO
COMMAND THE UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 10897 if you write the maker

Electric Heat With a Guarantee!

For OVENS and FURNACES



"Folded-and-Formed" Heating Elements covering entire work area in straight convection oven.

Custom-built insulated plug with "F-and-F" Heating Elements attached, in air circulating oven.

Standard "Folded-and-Formed" racks in batch type air circulating oven.

STANDARD RACKS—1.5 to 7.5 K. W.—made in 12" x 12" sections are used vertically or horizontally, singly or in multiples, to provide any desired total K.W.

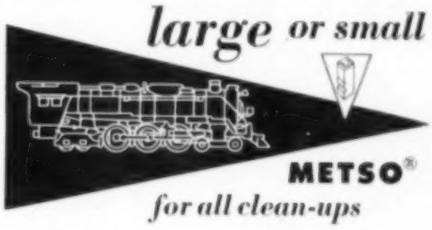
CUSTOM-BUILT RACKS available in wide variety of sizes, up to 600 K. W. in one bank.

SPECIAL RACKS, up to 10' high by 10' long, with any required K. W. per square foot of surface area.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE PHILA 27 PA

BREVITY—Identify by IEN - 10898 if you write the maker

large or small



METSO®
for all clean-ups

If you have a clean-up job as big as a locomotive, Metso can do it. For removing gummy oil deposits from locomotive boilers (open type feed water heaters) ½ oz. of Metso Granular per gallon of water is used . . . or if your dirt removal problem is oily ink from printer's type, again Metso leaves the metal surface clean.

Here is Metso's special cleaning efficiency . . . removes dirt and prevents its re-deposition on the clean surface. Specify Metso on your next order for clean-up. Conveniently packed in 100 lb. bags or 300 lb. drums.

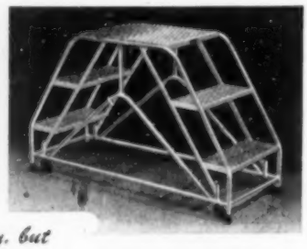
*Philadelphia Quartz Co., 1131 Public Ledger Bldg.* Philadelphia 6, Pa.

120th Anniversary 1831 PQ 1951

METSO
detergents

BREVITY—Identify by IEN - 10899 if you write the maker

# NEW ALL STEEL A-TYPE SAFETY LADDER



*Rolls easily, but automatically "locks" to floor when used.*

For use on busy assembly jobs and in stock-room aisles, the Ballymore A-Type ladder permits two or three persons to work where only one can work with a standard ladder.

Will not "kick-out" because rubber tipped legs engage floor automatically when ladder is used.

*Write Today For Complete Information*

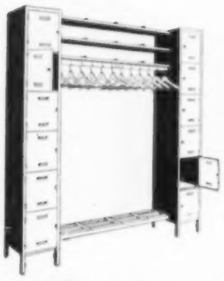
THE BALLYMORE COMPANY Wayne 4, Pa.

BREVITY—Identify by IEN - 10900 if you write the maker

# VALET RACKS

*Lockerette*

KEEPS WRAPS "in press"



improves health and morale—lowers absenteeism

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 18" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 6-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

*Write for Bulletin OL-5*

VOGEL - PETERSON CO.
624 So. Michigan Ave., Chicago 5, Ill.

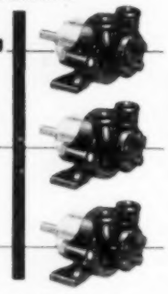
BREVITY—Identify by IEN - 10901 if you write the maker

# TUTHILL Model L PUMPS HELP SOLVE YOUR DESIGN PROBLEMS

For Pressure Lubrication

For Hydraulic Controls

For Liquid Transfer



Tuthill Model L positive displacement internal-gear rotary pumps are noted for their mechanically-sealed, leakfree performance, quiet operation, low power consumption, and long life. Capacities up to 5 g.p.m. and pressures to 300 p.s.i. Ring or foot mounting. Stripped models available for special porting arrangements.

Find out today how these dependable pumps will help solve your design problems. Write for Model L bulletin.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Ill.

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BREVITY—Identify by IEN - 10902 if you write the maker

# MEMO

FROM: Arthur Bauer
Deep Down in Dixie

TO: Purchasing Agents
Everywhere

SUBJECT: GIFTS FOR CHRISTMAS

For GOODNESS Sake, please wire or write at once for our new 1951 illustrated folder, describing ARTHUR BAUER'S PLANTATION PRESERVES and RELISHES, a gift that's sure to please.

Choice of 10 Christmas Gift Box assortments, priced from $2.95 to $24.95, with selections of our famed good-eating specials.

Prepared with tender care from taste-tested old Southern plantation recipes: Artichoke Relish—Spiced Watermelon Rind—Orange Marmalade—Whole Peach Pickle—Peach-Pineapple Preserves—Spiced Cinnamon Pears—Clear Guava Jelly and others. Also, our old fashioned Chewy Pecan Pralines and delicious Orange-Pecan Stuffed Dates.

CHARGE ACCOUNTS SOLICITED FROM RATED FIRMS

Special Discounts Offered on Orders of 50 or More Identical Packages

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Walterboro 5, S. C.

3 Full Pints, Trial Package, Only $2.95 Postpaid

GUARANTEED TO PLEASE OR MONEY REFUNDED

BREVITY—Identify by IEN - 10903 if you write the maker

# need LOW temperatures in your production or testing?

Murphy & Miller cabinets will meet your requirements

FEATURES:

★ Completely Sealed Refrigeration Units
★ Welded Tube Assemblies—No Maintenance Problems
★ Ranges to 140°F. . . Most Advanced Designs Available

If your production requires low temperatures for any reason—in any range, there's a Murphy & Miller Chest or Cabinet to meet your needs. Extra features such as controlled heating and humidity available in any cabinet or chest. Capacities from 1 cu. ft. and up, in standard or special models to your order.

*Write for bulletins and specification data today.*

MURPHY & MILLER, Inc.
1324 SOUTH MICHIGAN • CHICAGO 5, ILLINOIS

BREVITY—Identify by IEN - 10904 if you write the maker

# INCREASE production with these 3 Commander PRODUCTION TOOLS

1

Adjustable MULTI-DRILL

★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and ruggedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastics are drilled.

2 Commander TAPPER

★ 1 Tapper Handles Taps 0 to ¾"
★ Automatically Sensitive... Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

*The Tapper that "Thinks for the Operator"*

Commander Tappers "think for the operator"—automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping—permit faster tapping, better work, even with inexperienced operators. Torque control provides positive tap protection from 0 to ¾" . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.

3

ORDINARY CHIPS

Commander DRILL CHIP BREAKER

Gives you reduced drilling costs because you get:

★ Faster Drilling—Drill Speeds increased 100% or more.
★ Deep Holes—8 to 20 times drill dia.
★ Accurate Holes ★ More Holes per hour
★ More Holes per grind

CHIP BREAKER CHIPS

Commander Drill Chip Breakers are equipped with Morse Taper Drivers and ½" chucks.

*Write for illustrated Circulars on Commander Production Tools.*

See us at Booth A-159 National Metal Show, Detroit, October 15th to 19th.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

Products of Commander . . . Builder of Production Tools

BREVITY—Identify by IEN - 10906 if you write the maker

RELY ON

Sperry

Ultrasonic

REFLECTOSCOPE

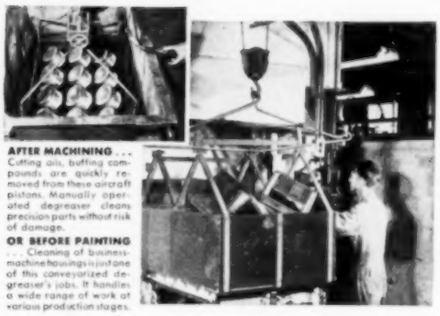
TEST NEW MATERIAL at the mill to improve quality and customer acceptance. TEST METALS BEFORE PROCESSING, MACHINING AND FABRICATING; avoid machine time and man-hours wasted by faulty materials. QUALITY CONTROL of work in process. MAINTENANCE INSPECTION to detect fatigue fractures. MEASURE DIMENSIONS. Rely on the Ultrasonic Reflectoscope to provide accurate inspection — instantaneously at low cost. Available for sale, for rent or lease.

WRITE FOR DESCRIPTIVE BULLETIN TODAY!
Learn How to Improve Quality and Save Dollars

Sperry SPERRY PRODUCTS, INC.
DANBURY, CONNECTICUT

BREVITY—Identify by IEN - 10907 if you write the maker

For "production-line" cleaning



AFTER MACHINING . . . Cutting oils, buffing compounds are quickly removed from these aircraft pistons. Manually operated degreaser cleans precision parts without risk of damage.

OR BEFORE PAINTING . . . Cleaning of business-machine housings is just one of this conveyorized degreaser's jobs. It handles a wide range of work at various production stages.

VAPOR DEGREASING
saves time . . . speeds output

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Firm _____
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X-Ray Equipment 100*

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BAND SAW GUIDES

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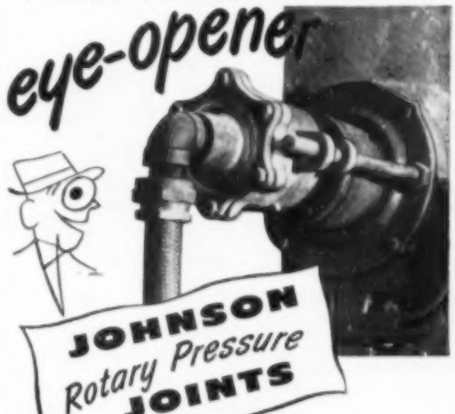

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Rotary Pressure
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## "I WISH I HAD"

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

**BUSINESS..** "I wish I had a buyer with ambition and mechanical training to take over my specialized oil and packing business which I founded in Michigan in 1937. $20,000 will handle. I want to go fishing." **IEN W-68**

**MANAGEMENT..** "I wish I had contact with a manufacturer requiring an engineer with 15 years of experience in supervising plant management. Wisconsin." **IEN W-69**

**NEW PRODUCT..** "I wish I had contact with a manufacturer interested in production and sale of my patented combination sheet stock support and stacker for shearing machines. A single operator can cut light and heavy gage stock in a squaring shear with continuous front feed that delivers the sheared material stackpiled on a skid or conveyor in the rear of the machine. In Massachusetts." **IEN W-70**

**NEW PRODUCT..** "I wish we had contact with an inventor or manufacturer with a photographic product he desires to sell or license for our manufacture and sale. Patent must be applied for or issued. We are located in California." **IEN W-71**

**NEW PRODUCT..** "I wish I had contact with a manufacturer interested in producing and selling my patented typewriter attachment which employs a ribbon to make the original and four copies so no carbon paper is required. The attachment is at present in limited production and is in quantity use by the Government." **IEN W-72**

**PRODUCTION MANAGER..** "I wish I had contact with a manufacturing concern needing a production or general manager with 14 years of experience in industrial engineering, materials handling and administration. I am 35 years old and am located at present in New York State." **IEN W-73**

**SURPLUS..** "I wish we had a buyer for a Noble & Westbrook marking machine that we are holding in our plant in New Britain, Conn. It is in first-class condition and will mark bushings up to 1¼ in. at 5,000 per hour." **IEN W-74**

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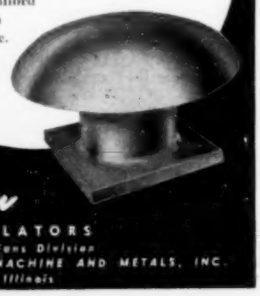
is a motor-driven fan in weatherproof housing. Provides 975 cubic feet of air per minute. Permanently lubricated motor, removable head, copper insect screen. Low, streamlined design blends with modern architecture.



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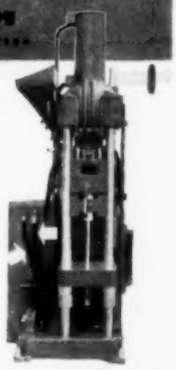
BREVITY—Identify by IEN - 10918 if you write the maker

CMH FLEXIBLE MACHINE TOOL CONDUIT

FOR SAFE, DEPENDABLE wiring under all conditions...



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BREVITY—Identify by IEN - 10919 if you write the maker

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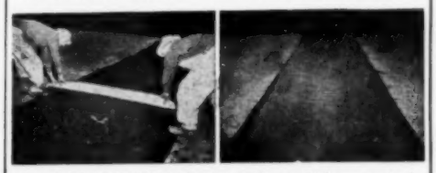

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